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ACCESS!**

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paying too much*

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From Emap Computing

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07

Internet Access without the Excess



without the Excess

Company	Both 56 kbps Modem Technologies	Free Windows Software Supplied	ISDN* or Modem at same price	Annual cost† based on hours on-line per month			
				1 hour	6 hours	12 hours	24 hours
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Compuserve*	x	✓	✓	£78.00	£101.40	£241.80	£522.60
Demon	x	x	✓	£132.50	£132.50	£132.50	£132.50
Easynet	x	✓	x	£143.80	£143.80	£143.80	£143.80
Pipex Dial	✓	x	x	£175.00	£175.00	£175.00	£175.00
Global Internet	✓	✓	✓	£89.99	£89.99	£89.99	£89.99



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*From anywhere in the UK.

†Includes any applicable setup charge but not introductory offers.

*Compuserve prices are set in US Dollars and converted at prevailing exchange rate.

Information correct at time of going to press.

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3 56k Ready - BOTH TECHNOLOGIES

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FREE WEB ACCESS!

Free Web access!
Find out if you're paying too much for your Internet access
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Plug in your CD

We tried, but we just couldn't fit any more on the CD-ROM on the cover of this month's magazine. Amongst the 650Mb of bits and bytes, you'll find a month's free trial to LineOne with its vast array of content and 32-bit interface; a complete collection of reviews from the magazine; links to more than 2,000 of the UK's best sites; our Web Toolkit, with its 'best of' selection of shareware; all the Hot Downloads featured in the past three months of the magazine; and, as if that weren't enough, demos of databases, search agents, anti-virus software and much, much more. Turn to page 32 for more details...



Point your browser at www.emap.com/internet/ and you'll find:

- News – fresh, every working day
- A full list of IAPs sorted by region
- All the cybercafés in the UK
- Links to the latest tools and utilities in our Software Finder, and
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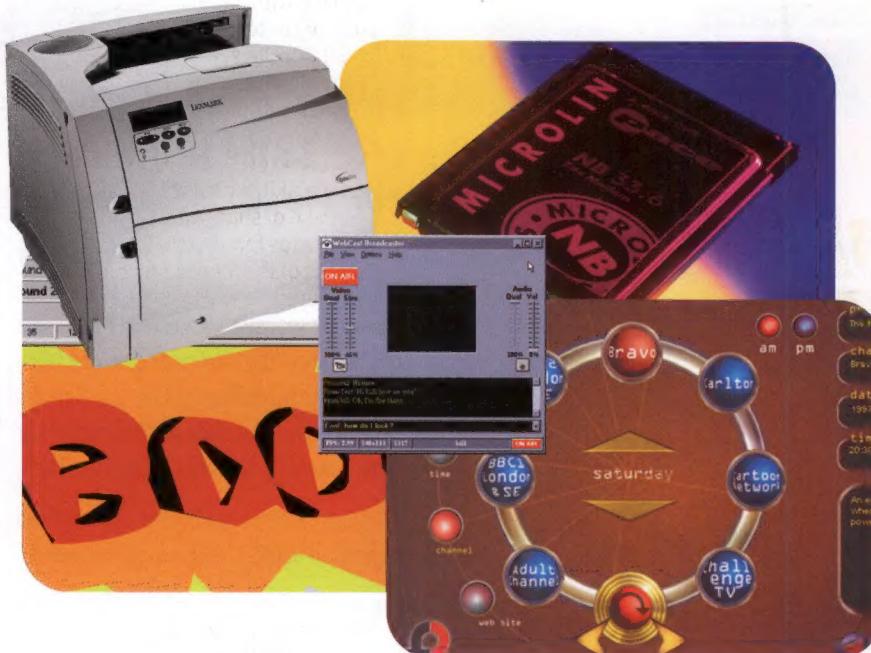


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124 How to host your own Web site

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The UK's most comprehensive testing of Internet access providers

56K modems and the Internet access services that support them are still in their prototype stages

UUNet Pipex has trialled the 56K service with a selection of users but it's yet to go mainstream. As for the 56K Flex standard, as promoted by the likes of Hayes, the modems might be there but we couldn't find any access providers trialling the service to commercial customers. But all of this doesn't seem to matter to the modem manufacturers – 56 is now old hat to these guys. The next generation of modems will reach speeds of 100Kbps and they'll be available by the end of the year, we're told.

Well, that's just great isn't it – *Internet Magazine* readers are still complaining about not being able to get hold of the X2 upgrade for their 33.6Kbps modems (see Mailbox, page 26) and already they're out of date.

It's a bit of a bloomin' cheek. We're expected to be eternally grateful for this extra turn of speed, but then we have to shell out yet more money on upgrading our equipment. And exactly how long have we been waiting for this 56K speed? We all thought we'd be merrily wandering the Web at the new speeds early this year. So what happened? Endless excuses and promised delivery dates missed by miles – that's what happened!

Both Hayes and US Robotics are promising 100Kbps plus speeds by fusing together analogue phone lines. Meanwhile, US comms companies are already working to meld three normal phone lines together to achieve speeds of 168Kbps.

What does this all mean? The installation of a second phone line at the very least and more money in BT's coffers. What's more, I'm just the tiniest bit sceptical about these super-fast modems arriving before the end of the year. Let's face it: deadlines have not been hit as yet.

Why should we trust these guys now? Approach all speed upgrades with caution, is my advice.



Gail Robinson
Editor

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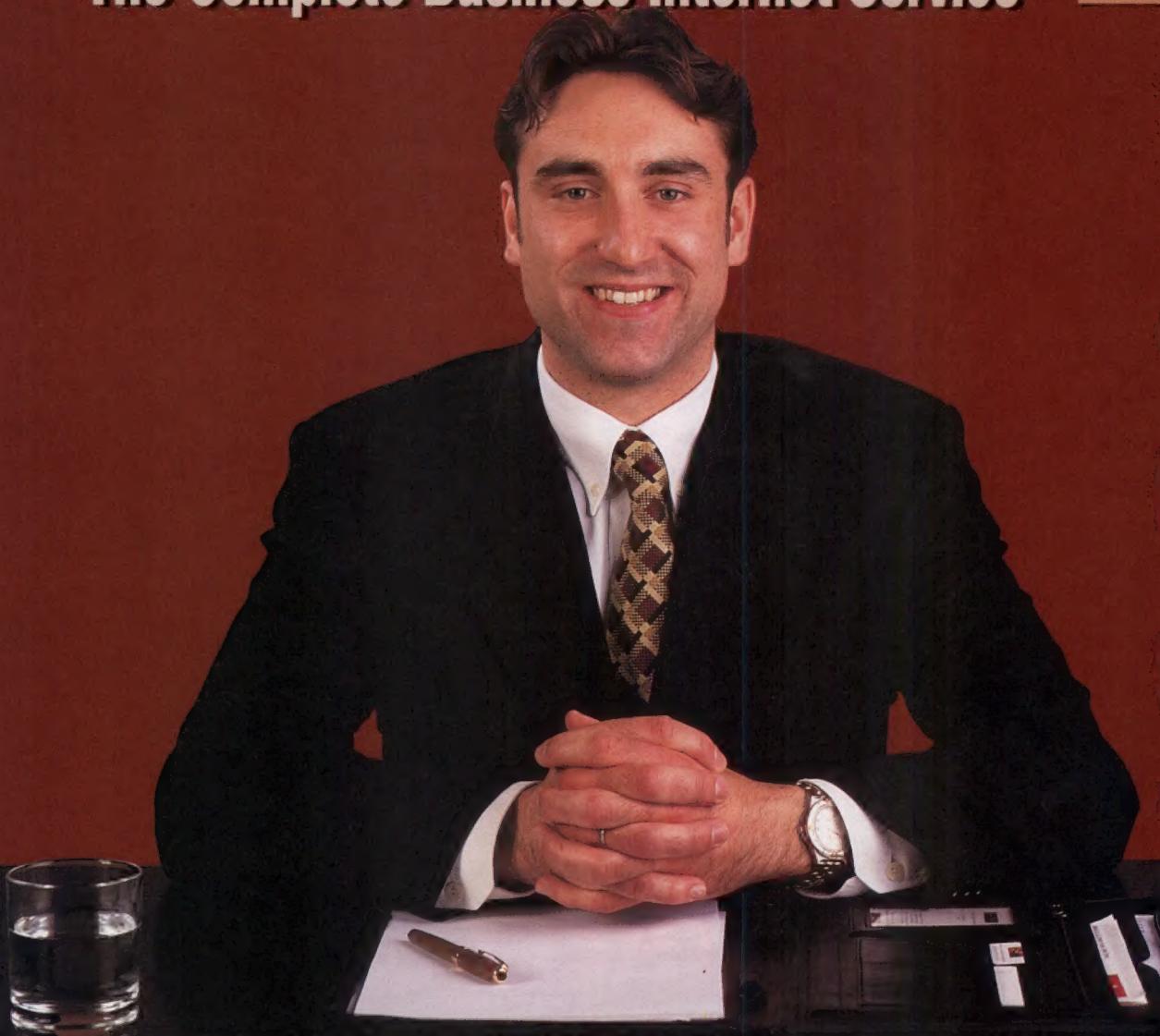
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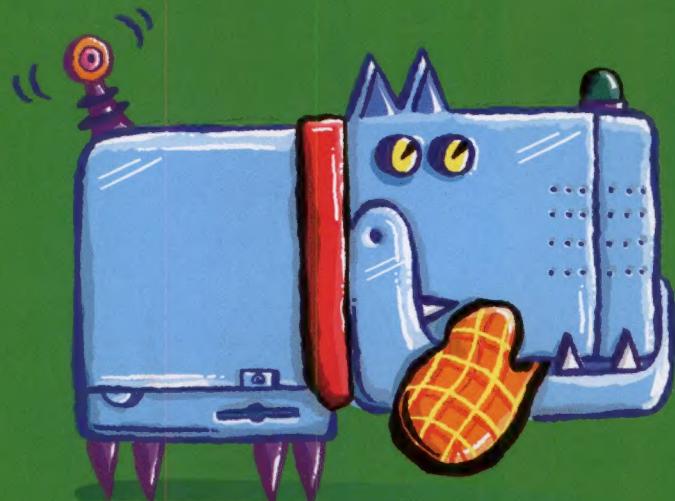


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news



DIGITAL SERVICES

Big names join to target Net market

Access to the Net will be a core feature of a new digital services to be released in the UK early next year. The service will also boast TV-based banking, online shopping, email and access to the Net.

The project, called British Interactive Broadcasting (BIB), is a consortium of BSkyB, BT, Midland Bank and Matsushita. BSkyB will provide the programming, BT the backbone and Matsushita the hardware, while the

Midland Bank handles the underlying financial transactions.

Early signs are that the Net access will be controlled. It'll probably come from a service that only presents Web sites these backing companies deem appropriate. This has raised fears that LineOne, the BT and News International service, will provide the Web service.

Both the email and Net facilities will be handled by a remote control handset, although an infra-



A new super-company sets its sights on Internet access

red keyboard is optional. The BIB service will be available via a set-top box, which even existing satellite customers will need.

The venture is costing over £250 million, but much of this will be used to reduce the cost of the set-top box to consumers. BIB estimates that the boxes themselves will cost around £200.

Both SkyB and BT will own 32.5 per cent of BIB, the Midland Bank has a 20 per cent stake and Matsushita is left with 15 per cent. BIB plans to turn a profit within five years.

www.bib.co.uk/

DOMAIN NAMES

MTV attacks UK company over domain

A South-coast based Internet company experienced the wrath of a major corporate over its use of a domain name. Hampshire-based Internet company and Web designer CyberSpider received an injunction from US entertainment giant Viacom over its use of the mtv.co.uk domain.

CyberSpider boss Lance Taylor also runs a training company called Messenger Training Ventures, for which he registered the domain in November 1996. MTV is a registered trademark, and Viacom claim that Messenger Training Services is infringing its trademark rights.

Viacom issued an injunction against Messenger Training Services to ensure that the company stops using the MTV domain. Viacom is also seeking compensation for infringement of the trademark.

In an attempt to halt any further proceedings, Taylor has since pointed the mtv.co.uk domain at the mtv.com Web site. He has also been offered compensation ranging from £250 to £500 by Viacom and its solicitors, Simmons and Simmons, for the name.



Taylor was also approached at one point by a company calling itself Middlesex TV which wanted to the MTV domain!

At the time of going to press, Viacom and its solicitors had placed another deadline on Taylor to stop using the domain name. Taylor says he will cease as long as Viacom cover his costs for changing the name on his stationery and other documents. "I've tried to be accommodating," he said. "We can't afford to defend the name if it goes to court." MTV has been in the news before over domain names, closing down ex-MTV video jock Adam Curry's unofficial MTV site a couple of years ago.

Mark Henderson-Thynne at NetNames explained that from what he knew about this case it was an issue of trademark infringement, unless Messenger Training Services could prove it had been trading under this name online for around two years and that people identified the company with the MTV name.

www.mtv.co.uk/
www.mtv.com/

DOMAIN NAMES

First-come, first-served ruling on names

In a landmark decision in London's Royal Court of Justice, a UK judge has set a precedent of first-come, first-served for the allocation of UK domain names.

Two companies – Pitman Training Limited and PTC Oxford Limited – registered the pitman.co.uk name through NetNames and I-way respectively. Both compa-

nies used the name to promote their businesses. This loophole, which allows two companies to successfully register one name, has now been closed. Nevertheless, the two companies could not come to an agreement.

PTC Oxford requested that Nominet, the UK domain naming agency, return the name to it on a

first-come, first-served basis. Nominet complied, cutting off Pitman's access to the name, thus forcing Pitman to go to court.

At the hearing, Vice-Chancellor Justice Scott declared that the name remain with PTC Oxford, as it was the first company to register the name. Scott also ruled that Pitman pay PTC's costs.

Mark Henderson-Thynne, a spokesman for NetNames, commented that "one of the UK's most senior judges has underlined the importance of domain names and shown that the first-come, first-served nature of the names can be defended in the courts."

www.netnames.co.uk
www.nominet.org.uk

Oasis looks Netward in anger

Oasis has angered both fans and webmasters after attempting to censor sites created by its fans.

Oasis' management company, Ignition, emailed the webmasters of unofficial sites asking them to remove "image, text, sound, and video files" from the sites. Unless webmasters had the permission of the copyright owners, they couldn't reproduce "press interviews, television appearances", or "unauthorised recordings of live performances". Webmasters were given 30 days to comply or face legal action.

Over 100 webmasters are trying to make Ignition reconsider, pleading that the use of sound and

images is vital to the unofficial sites. Jack Martin, webmaster of an unofficial Oasis site, has challenged the validity of the management's claims that some of the



sites break copyright and intellectual property laws. In a message posted on the Oasis Webmasters Freedom page, he claims that he has "neither the time nor the inclination to enter what could become a lengthy court battle with the management company of

one of my favourite bands. But if I were the defendant in a legal action I would defend myself," keeping open the possibility of future legal action. But for now, Martin has taken all sound and video files off his site, bar a collection of execrable midi files.

Oasis has issued a statement which says: "There are a number of sites out there which, to be frank, we feel have taken advantage. In particular, a number of pages have been copying freely from the official home page without bothering to ask permission."

<http://falcon.cc.ukans.edu/~jackm/OWIF.htm>

INDUSTRY

Come to Malaysia: it's Net heaven

Malaysia is offering tax breaks and research and development grants to Western nations to persuade them to move their Internet business to Cyberjaya, the city at the centre of the Malaysian Super Corridor (MSC).

The MSC is a 750 square kilometre zone extending south from Kuala Lumpur. The corridor's core is to be based around Malaysia's future capital city of Putrajaya and the new city of Cyberjaya, the first IT city designed from the ground up.

"Malaysia offers the multimedia super corridor as a huge test-

bed for trying out not just the technology but also the way of life in the age of instant and unlimited

information," says Malaysian prime minister Dr Mahathir. "We are hoping that one day there will be worldwide understanding as to what can and cannot go into the Internet. Until then you will be free in the MSC."

Amongst the incentives offered to the West are a five-year tax exemption, duty-free imports of multimedia equipment and

R&D grants. Foreign companies will be offered unrestricted freedom of ownership and the right to bring in unlimited foreign workers. The industry advisory panel to the MSC counts Bill Gates, Jim Barksdale, Larry Ellison and Scott McNealy amongst its members.

The MSC is a massive undertaking, bringing together digital communities in education, commerce and developers. And it's all backed by a raft of revolutionary legislation targeting new media.

www.mdc.com.my

WEB SERVICES

Beeb pushes new free online services

The BBC has released the first results of last September's tie-in with ICL as it rolls out Beeb, its commercial Internet service built around its existing TV and radio services.

The service began with the June 5th launch of The Score, its sport brand, which includes existing sport channels such as Football Focus and Rugby Special, and BBCShop, the online transaction centre that will initially sell videos, books and other BBC merchandise.

The service, which will use push technology to deliver the latest-breaking news, including ball-by-



ball coverage of this summer's Ashes series, will be free to UK users.

The BBC will recoup its financial outlay via online advertising.

Future areas of the service will include a TV and film site with sound files and personalised TV listings, followed by comedy, travel, science fiction and edutainment areas which will appear by November 97.

The full Beeb service will be launched in September, but several individual content areas will make an appearance before then.

www.beeb.com

Just in...

Despite being booted off the Net by Enterprise, the Prolife Alliance has once again managed to find a home for its site. Manchester-based IAP TimeWarp Internet has the dubious honour of hosting the site.

www.prolifealliance.org.uk

Check out the Internet business seminar, supported by *Internet Magazine*, on 16th July, in Farnborough. The seminar will focus on topics such as Internet commerce and online marketing. For more details email info@floyd.co.uk

The growth of the Web, as measured by individual pages, will double this year and triple the next according to research from Forrester.

www.forrester.com

Around one thousand people tuned in to watch the radio as Virgin Radio's Russ and Jono's Breakfast Show was broadcast live for three hours using RealVideo technology from Progressive Networks. "We'll be broadcasting more shows over the Net in the coming months," said John Ousby at Virgin Radio.

www.virginradio.co.uk

The National Criminal Intelligence Service is recommending new Net monitoring powers for the police.

www.open.gov.uk/ncis/ncishome.htm

After being sold by its Dutch owners late last year, UK Planet Internet is to fold. Users will be offered an AOL account.

www.uk.pi.net

Corrections

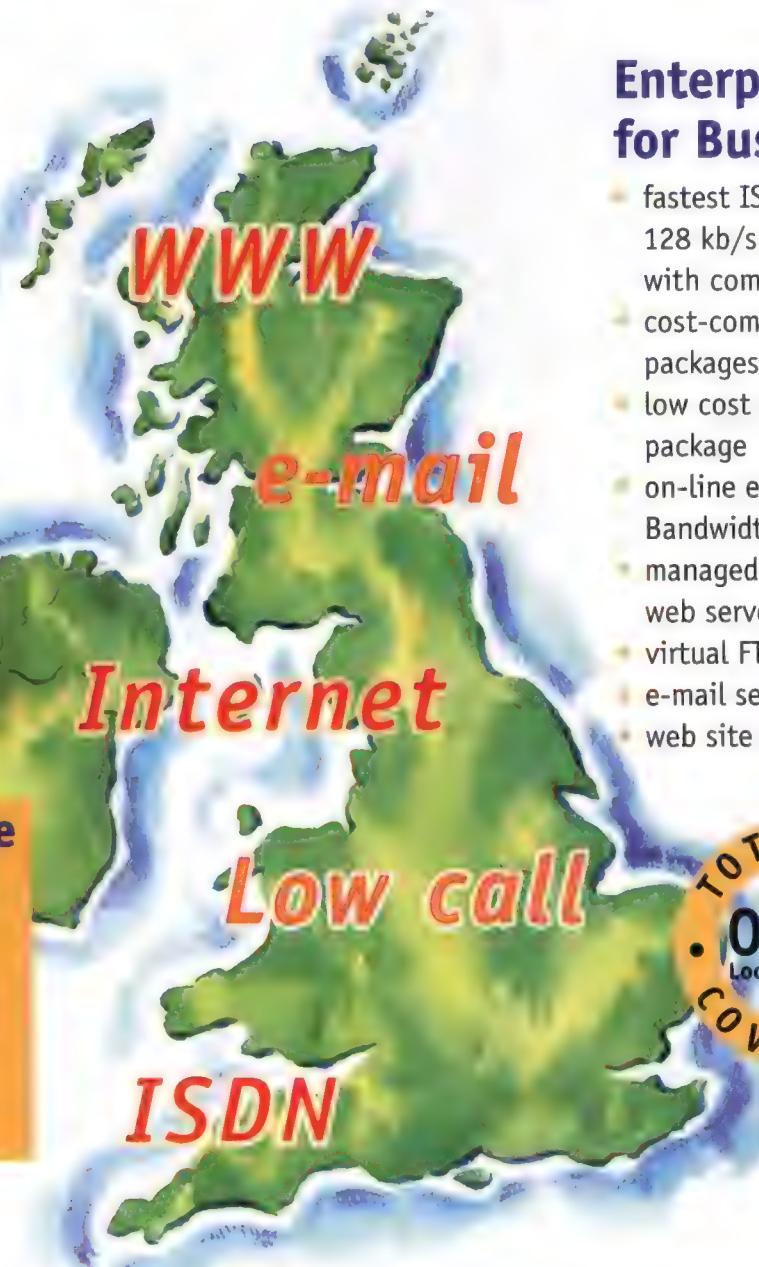
Apologies to Oscar Jenkins at the Uptime Group and Peter O'Connell of Infotrade for last month's picture mix-up (*Internet Magazine* 31, June 97, page 9).

Apologies to MINX, the Manchester Internet Exchange Limited, for the unintentional use of its logo in relation to our Manix analysis piece (*Internet Magazine* 29, April 97, page 19). MINX has no connection with the Manchester peering point, and is an independently-owned Web consultancy and design company.

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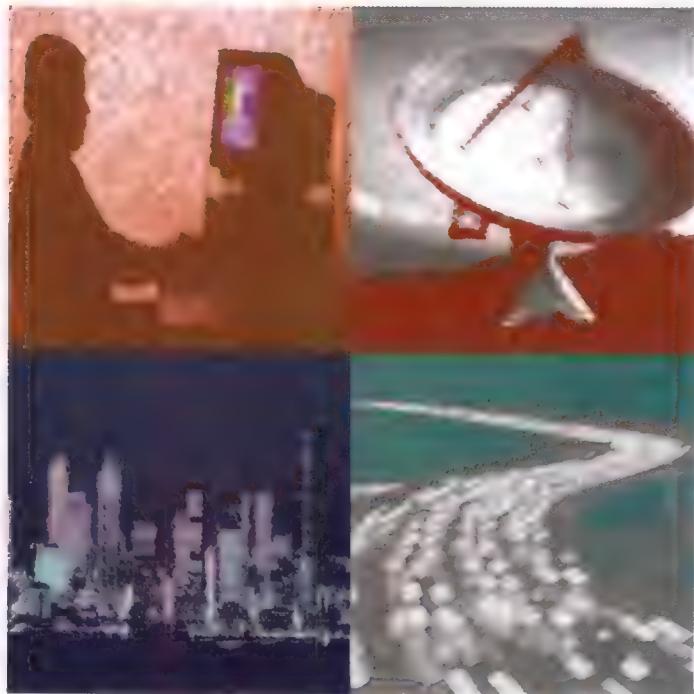
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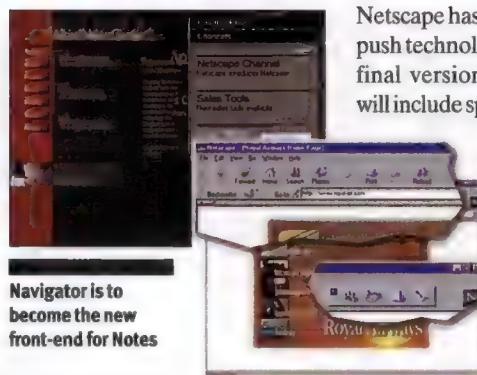


Netscape to navigate Notes

Working on the principle that 'my enemy's enemy is my friend', Netscape is to split its Navigator browser from the Communicator suite and is letting Lotus use it as a front-end for Notes.

At this month's developers conference in the US, Netscape is to unveil a relationship with Lotus that will see Netscape's browser technologies integrated into Notes, the flat-file database and groupware solution which dominates the corporate market.

This relationship highlights Netscape's push into the business market, as the company watches its share of the consumer market steadily being eroded by the inexorable marketing of Microsoft



Navigator is to become the new front-end for Notes

and, in particular, the free distribution of its Internet Explorer browser. The deal should cement Netscape's hold over the business market, where it remains the most widely used browser.

Netscape has also outlined its new push technology applications. The final version of Communicator will include special marquee channels that are produced in conjunction with the online directory, Yahoo!

Netscape's announcement follows hot on the heels of another big development. Netscape has included over 100 Marimba push channels into its Channel Finder, Communicator's built-in guide to available Web channels.

www.netscape.com

WIRELESS ACCESS

Big, fast bandwidth links

Net access providers and cable companies could soon be offering multi-megabit wireless Internet access.

The PortLAN Wireless Internet System, from Israeli company RDC, will help in areas where it has been previously uneconomical or environmentally unsound to lay cable.

The system uses a 2.4GHz frequency band which offers a whopping theoretical access rate of 700 Kbps per access point, although this must be shared between all users subscribing to a particular point of presence.

Initially developed for the Israeli military, the system works over a 50Km range. A central

access point unit connected to the local POP, either directly or by leased line, sends and receives data through an antenna. End units, configured either as routers or bridges provide the connection at the client end.

The most obvious benefit to the access provider is the ability to create their own infrastructure, bypassing both BT and the cable companies.

The PortLAN hardware is already approved for use in the UK, and currently needs no operating licence. RDC is about to enter talks with UK access providers after two successful pilot roll-outs in the US.

www.rdc.com



Wireless connections to the Internet promise fast access and big bandwidth

MERGER

Future of radio Web sites uncertain

As part of Capital's £87 million takeover of radio group Virgin, the development of two of the most vibrant UK sites is in jeopardy.

Staff at Virgin and Capital remain unclear about the ramifications of the merger for programming and new media projects. Both have active new media departments, with the Capital FM site recently winning a creative and design award for best music-related Web site, while Virgin pioneered the webcasting of concerts.

"Until we get radio authority approval we're going on as usual," says John Ousby, financial controller at Virgin Radio. "But it's potentially very exciting for us at Virgin to tap into that resource."

"We know nothing about what's going to happen," said Tom Loosemore, editor of the Capital FM site. "I'm delighted personally as I can start promoting synergy between radio and Net nationally."

The newly merged superstation would also go head-to-head with Radio 1. "I don't really see the merger as a threat," says Simon Wilburn, Radio 1's Website manager. "The point of the merger is to resource themselves for the advent of digital broadcasting."

www.capitalradio.co.uk
www.virgin.net

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UK Net use beats Europe

British small and medium sized businesses are pioneering business use of the Internet and email faster than major European nations.

This is the conclusion of new research by Grant Thornton. Its

European Business Survey found that the use of the Net and email at work is surprisingly low throughout Europe.

Of those polled in Britain, 40 per cent have an email facility at work, compared to a European

average of 32 per cent. Almost one-third of British firms use the Net to research information compared to a European average of 24 per cent. Switzerland and Finland recorded the most prolific use of the Net, while France polled a lowly 8 per cent, a fact attributed to the prevalence of the Minitel system.

"We do seem to be leading the way for Europe in some respects, I think British entrepreneurs have identified the cost-saving benefits of the Net," says Michael Rogerson, a senior partner at Grant Thornton. "However, like the rest of Europe, the UK is not actively using the Net to buy and sell yet. That's where we lag behind the States."

European email and Net usage

	Email	Net for info	Net to sell	Net to buy
Finland	50%	44%	21%	15%
France	36%	8%	4%	3%
Germany	25%	22%	8%	11%
Malta	54%	55%	13%	18%
Norway	42%	41%	12%	19%
Switzerland	50%	40%	18%	21%
UK	39%	32%	11%	7%
EU Average	32%	24%	9%	9%

Source: Grant Thornton. www.grant-thornton.co.uk/euro1.htm

INTERNET ACCESS

UUNet gets tough with peers

To offset the cost of building its 155Mb backbone in the UK, UUNet will soon re-negotiate its peering arrangements.

Peering is the relationship that allows Internet traffic to flow freely across different networks. IAPs agree to carry each other's traffic either side of the Atlantic without charge. However, the burden of providing peering to several small IAPs has forced UUNet to charge for future agreements.

"We're not saying specifically that we won't peer with small IAPs, but peering is about mutual benefits, and the scale of things has changed," said UUNet communications manager, David Barrett. "WorldCom [parent company of UUNet] is spending \$500 million on a new transatlantic cable link,

and that doesn't come for free. It's business basically."

Barrett confirmed that if a similar-sized organisation with similar load items were to seek a peering agreement, then no money would change hands. But the move undoubtedly leaves some smaller IAPs in a quandary. Glenn Rothwell, managing director of IAP I-Way, confirmed that he was "caught between the devil and the deep blue sea. The Net is going to become more commercial, but the sadness is that this leaves the dial-up user with the brunt of the costs."

Rothwell confirmed that UUNet has yet to approach them over peering. "They're not the fastest off the starting block when it comes to commercial arrangements," he added.

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UUNet is about to get tough with the smaller IAPs
www.uunet.pipex.com/

MODEMS

100Kb modems by end of year

Despite the late arrival of both 56Kbs technology, both Hayes and US Robotics, plan to introduce 100Kb+ modems before the end of the year.

US Robotics now estimates that the 56Kbs service will launch at the end of June. The company has assured owners of its Sportster 33.6Kb modems that chip upgrades will be available mid-July.

Although modems from K56Flex vendors are now available, no IAP was offering commercial testing of K56Flex as we went to press. Ascend, which supplies IAPs with K56Flex routers and hubs, reckons the first services will be available by late June.

US Robotics will announce a two-line router that will offer 112Kb throughput in autumn, while Hayes' version will be aimed at the consumer market. These are designed to be used over two analogue phone lines fused together. A small US vendor, Ramp Networks, is expected to release its WebRamp M3 modem which will fuse together three telephone lines, offering a theoretical throughput of 168Kbs.

www.usr.com
www.ascend.com
www.hayes.co.uk

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Who will buy CompuServe?

CompuServe is embracing the Internet yet again with a content-only proposition. **Mike Bracken** looks at how the potential future could pan out for this most troubled of online services

CompuServe is to unbundle Internet access from its content provision." The grandfather of online services – and by some distance the market leader in the UK – is to try, yet again, to embrace the Internet.

These are the plain facts. CompuServe has decided that, as Internet access becomes ubiquitous, content will be crucial. To this end, its many thousands of forums will be grouped under 21 CompuServe communities, themselves grouped under seven categories. These categories are: news; business; reference; leisure; education; entertainment; and computing.

Content that CompuServe has commissioned from leading publishers, including online versions of top selling magazines from Emap such as Total Sport and Q, will be used to attract punters on a pay-per-view basis.

CompuServe is busy negotiating content-only deals with UK ISPs, and will employ producers to select Web sites it believes will be of interest to its users. With a branded credit card and membership benefits to follow, CompuServe will try and extend its brand as a content company. "We're going for ABC1 families," claims CompuServe's UK manager Martin Turner.

No money in Net access

On the one hand, this strategy is sensible. Access is a cut-throat market with little brand loyalty, and with media companies like LineOne (News International) and MSN ramping up content while buying the cheapest network provision available, CompuServe's ties to its own net-

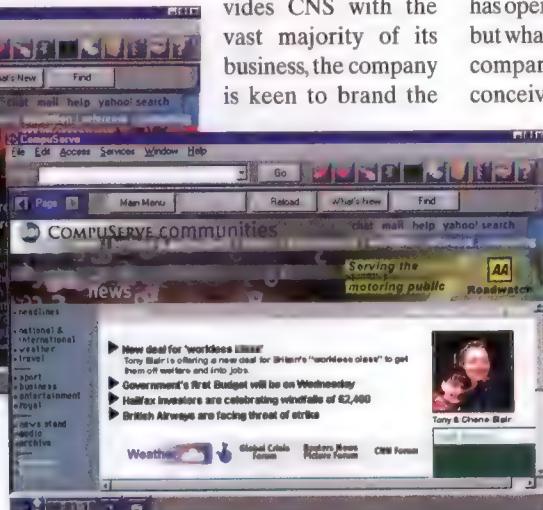
work services division and its proprietary interface had to go.

Under the surface

Despite CompuServe's upbeat mood, the move hides a multitude of sins. The most important schism within CompuServe's is the



The new interface and community content groups can't disguise structural flaws that riddle the whole company



"CompuServe claims that unbundling will simply allow it to reach a wider audience"

European/American relationship. In the US, the failed WOW consumer service and the disastrous purchase of browser company Spry (over \$100 million thrown away before CompuServe turned to Microsoft's Internet Explorer) persuaded its owners, H+R Block, to put it up for sale. In that market it could not compete with the access-only companies nor did it have the clout to take on the major content players. Falling behind AOL and with MSN, Time Warner, Disney and Fox gathering momentum in the online market, it was a matter of sell out or become the next Prodigy. As a result, CompuServe in the US is targeting its original market: the business community.

How it works in Europe

Compare this with Europe. Here, CompuServe is split into two sections: CompuServe Network Services (CNS) which supplies bandwidth to companies and CompuServe Interactive (CSI), the online service. Yet as CSI provides CNS with the vast majority of its business, the company is keen to brand the

with two competing services or the nightmare task of integrating one service into the other.

Still Europe's largest Internet provider by a factor of two, CompuServe can only realistically be bought by one of a few companies. In the content arena, AOL has opened talks with H+R Block, but what would US content-based companies want with CNS? It's conceivable that network based

companies may look at CNS in Europe, especially network providers like Cable and Wireless which are ramping up their European networks. But what would networking companies want with CSI?

This quandary has only one solution: the unbundling of CSI from CNS and the separation of the US and the European operations. Until this happens, an outright purchase of CompuServe seems unlikely. Signs of this happening aren't clear, with CompuServe Europe boss Jerry Roest confirming that "there's no possibility that CSI would choose another network over CNS."

CSI and CNS in the US have a much looser relationship, so much so that it's conceivable that one could be sold off without the other. Yet with CNS in Europe almost totally reliant on CSI for its business, any sale of the CNS business in the US would leave CSI looking for an access partner and CNS in Europe seriously short of clients.

On the other hand, any sale of CSI in the US would almost certainly affect the UK market, as prospective buyers, notably AOL, have gone to great expense to launch rival European and UK services, and would then be left

Mike Bracken (mike@internet.emap.com) is deputy editor of *Internet Magazine*.

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the internet interview

The real thing

Rob Glaser, chairman and chief executive, Progressive Networks

Ten years spent creating the multimedia PC while hectoring the US government over civil liberties convinced Rob Glaser that he had to give the Web a voice to turn it into a global village. **Mike Bracken** finds out the true meaning of Progress.

What would you do if you suddenly became a millionaire? It's a commonly asked question, especially among the digerati looking to become the next Andreessen. Going back to the company you've served for ten years in an advisory capacity would not be on many people's wish-list, but that's exactly what Rob Glaser, chairman of Progressive Networks, did. But not many people are like Rob Glaser.

Small and verbose, Glaser is as quick with his movements as his actions. Like Brian Moore on fast forward, he paces around the new Progressive Networks office in London's Piccadilly, firing a seemingly random selection of questions at anyone within earshot. His ability to handle several information streams at the same time is astonishing, but this is an ability Glaser has honed over decades.

Glaser was born and raised in New York City. His father's embryonic print business and his mother's attempts to educate inner-city kids instilled in him the twin themes of his life: media and social activism. A maths junkie and a budding computer student, Glaser attended Yale University, where he wrote prodigiously, particularly for the Campaign Against Militarism, and

organised against the emerging Right. He invented commercial games software while simultaneously completing three degrees – economics, maths and computer science.

In 1983, after Yale, Microsoft came looking for him. Ten years in Seattle followed, where Glaser progressed from Word hacker to the instigator of the multimedia PC, the system we now accept as industry standard but was then a revolutionary departure from the clunky office computers. Despite Gates's protestations, ten years at Microsoft had left Glaser eager to pursue private interests, and in early 93 he cashed in his substantial share options and walked away.

After a brief holiday, Gates persuaded Glaser to come back to Redmond as an independent analyst, looking into Microsoft's attempts to integrate the TV and the PC. By this time, Glaser was a confirmed Net addict, having quickly seen the potential of the Mosaic browser developed at Illinois by a young Marc Andreessen. Although Glaser warned Microsoft of the dangers of developing MSN without Internet protocols, pursuing the Interactive TV model would delay Microsoft's Net turnaround for a further two years.



Rob Glaser photographed in London by Eric Richmond. Additional production by Agent Fluffy.



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that just about
everything has a
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“Caring about society in a broader sense is something I can’t separate from my interest in technology”

Unbeknownst to Microsoft, Glaser's plans for his own company were well advanced. In summer 94, Progressive Networks' RealAudio was born. An audio compression tool that gave the Web a voice. RealAudio became the de facto Web standard. Using Netscape's 'give away the client' model and Microsoft-esque marketing, Glaser struck deals for RealAudio with hundreds of companies. After its April 95 Web debut, RealAudio quickly moved up to 28.8Kbs capacity and, by 97, included streaming RealVideo.

Progressive Networks has opened offices worldwide. Yet Glaser still manages to find the time to balance his interest in social activism with a shareholding in his favourite baseball team.

Curriculum Vitae

May 1983 Leaves Yale with a BA and an MA in Economics and a BS in Computer Science. Joins Microsoft. After developing Microsoft Word, Glaser progresses to vice president of multimedia and consumer systems, a position that involves creating the specification for the multimedia PC

March 1993 Leaves Microsoft. Travels for several months before temporarily rejoining Microsoft as an advisor on Internet products

February 1994 Founds Progressive Networks, and serves as chairman and chief executive officer

July 1995 RealAudio released to the Net

October 1995 RealAudio 2.0 announced

September 1996 RealAudio 3.0 delivers 28.8Kbs video and audio over the Net

Where did your twin interests in technology and social activism stem from?

The civil rights movement and Vietnam War were influences, but again it's probably more my mother and my father. My mother was probably more overtly influencing in that she was a social worker with inner city school kids who had already dropped out of school and who were already on the way to the poorhouse. I always had this sense of obligation and responsibility because I felt I was very lucky.

Did working at Microsoft make you tone down your external interests?

The practical idea of life is that you only have 168 hours per week and you gotta spend some of those asleep. I don't think my interest in social activism went away, but if I did anything it was more in donations of money than time. I wouldn't say Microsoft discouraged activism, but I don't think it provided an outlet for activism because the pace of the place was so frenetic.

Do you think that some countries may view the Net as a vehicle for American political interests?

I'm one of these people who thinks that just about everything has a political angle. Inherent in any communication media is a political capability, and I think that the Net itself does bring a level of open communication that a lot of countries will be wary about. I don't think it's western ethnocentricity. I think it's inherent in the medium.

Emerging industries in the US have always given rise to political figures, but has the Net yet provided a contender?

Most of the people in the IT industry grew up believing in the marketplace alone. I think there's greater sophistication now. Particularly as the Net becomes a new medium, you run into the cable and broadcast industries that understand the fundamental importance of participating in the political process. Hopefully that will rub off in a positive way. As for who's gonna pick up that mantle, it's not obvious. I've spent enough time talking to folks in Washington DC – I wouldn't dream of trading places with them. I think they live in such a self-reverential world.

You're not likely to enter the fray, then?

In most cases people get oriented to the political process in ways that are meaningful to them. Now we have the CDA [Communications Decency Act – a censorship proposal currently on appeal with US courts] we have to get active and get engaged. I strive in my own small way to have a different model in terms of what's important. Caring about society in a broader sense is something I can't separate from my interest in technology. I see all these issues as interconnected. Maybe over time the Internet will help people see that.

How will Progressive Networks develop?

Our ability to grow is not a matter of shooting fish in a barrel – we have work to do. I hope that I can stay motivated and interested as the company grows. I saw Microsoft grow from a 250 person company to a 15,000 person company. I always admired how Bill redefined his job as the company went along. While I don't agree with him on every social and technological issue, he did a great job in being somebody who constantly renewed himself.

Are we likely to see Progressive Networks go public on the stock market soon?

I don't see a limit on our growth capped by the public market. The public market gave Microsoft a liquidity, but it started in 1976 and went public in 1986. It's not necessarily clear that you have to jump into the public market the first chance you get – or that it's even the best thing for an organisation to do. It was fashionable a year ago but companies that went public then are now trading at half of their initial value.

If you dominate the audio sector of the Web, won't that make you a target for Microsoft to acquire?

I don't think that my ten years at Microsoft represents diplomatic immunity. It means we have a better than average understanding of Microsoft's Maslovian hierarchy. When the company re-organised itself to compete against Netscape, that was fundamentally because Netscape was walking around saying that the Web interface is the new API. If you attack Microsoft's base of software developers you're going after its top level of Maslovian hierarchy, right up there with food and shelter. We have a different philosophy and strategy. There's no way that our success is going to harm Microsoft's.

mailbox

gailr@internet.emap.com



Virgin no-Net

I was interested to see last month's comments about Virgin Net. I haven't had such a good experience with them. I phoned Virgin and explained I wanted to order 20 Internet accounts and that I wanted pricing information. I was told an information pack would be in the post. A week and a half later the pack came but all that was in there was a CD.

I inserted the CD into my machine, which was running NT 4 workstation, and a message popped up stating I couldn't install Virgin Net on an NT machine. I then installed it on my Windows 95 machine and got the message, couldn't complete installation because it didn't have the right network drivers. I gave Virgin tech support a ring and asked when where they were going to release an NT version, the reply was "I don't think we are".

Now I'd wasted a whole day and all I'd got was an Internet provider that didn't work with NT 4, didn't send the right information and didn't know how to solve my problems. I'm now with UUNet Pipex. The service is excellent, the software runs under NT and it works with the network.

David Penrice

Dave.Penrice@racalinst.co.uk

Stephen Bonner, operations manager at Virgin Net, replies: "We're sorry you've had problems using NT4, but the minimum requirement to use the software is Windows 95 or Windows 3.1. Having said that, it's possible to use NT4 with Virgin Net, however we don't provide software or support."

"As for supporting network machines, all Virgin Net packs state you may need to consult our technical notes, or our helpline, to aid the installation of Virgin Net on networked machines."

Virgin problems

I joined Virgin recently. I managed to connect easily and the first site I looked at was the Virgin Net home page. This page

loaded quickly. Then, when I tried to go to Blizzard Entertainment's home page, it really slowed down. I phoned Virgin and was told they were installing an upgrade. I also asked about free Web space and was told I'd have it by the end of the month. The end of the month came and the speed was the same and there was no free Web space.

Halfway through my final free month the speed got faster. Still no free Web space. I phoned the support number and was told I should get it in a few days. I phoned Virgin Net's support number seven times over two days and was told something different each time!

Finally, after clearly stating I hadn't got any Web space, Virgin said it would send an email with the details the next day. Next day, guess what, no email! I phoned again and the email was sent out while I was on the phone.

Finally I had my free Web space. Still one problem though, the free Web space server is very slow.

Ben Ryall

ben@felixstowe.force9.net

Stephen Bonner from Virgin Net is a busy guy this month! He replies: "In April Virgin Net upgraded its bandwidth to make sure customers enjoyed the best speeds possible. We're sorry for any slow speeds experienced by our customers during this upgrade process.

We promised 10Mb of free Web space to our subscribers at the end of February. We began rolling out the free space from the beginning of March, starting with our oldest, paying, customers. Now everyone gets 10Mb of space as soon as they register with Virgin Net.

"We don't limit the amount of bandwidth our customers can use. This means we've attracted popular sites and this did slow down the server. As soon as we detected the problem we replaced the server. We also doubled the number of processors, the amount of memory and multiplied the bandwidth by ten. We don't believe there will be any more problems, but we will continue to monitor the situation."

BT charges

Most people would think the charges for bank holiday phone calls would be at weekend or off-peak rates. They would be wrong. And I haven't noticed BT

dispelling this obvious notion. Why should the rates for a non-working holiday be at peak?

Unless it says otherwise, BT charges the working day rate. Hands up how many people spent the May bank holidays on the Net thinking it was weekend rate! Sorry – you've been had!

David Hales

david@dendale.demon.co.uk

Gail Robinson replies: We talked to a BT spokesperson who explained that there are concessions only on certain bank holidays. The May bank holiday rate was the normal price. BT justify this by claiming that social change has led to many businesses opening on bank holidays and that the company is moving towards special offers on different types of calls at different times of the year.

We at *Internet Magazine* agree with you, David. These special offer prices can be confusing and I'm not convinced by the argument that many companies are now open on bank holidays.

Waiting for USR

A US Robotics spokesman's reply to your star letter (*Internet*

Star Letter

Mike Bracken claims the US is "quick to see that if it sets the [Internet regulatory] agenda then its businesses will gain." True, but you're assuming that there's a US entity doing the seeing. Frankly, it's just not so. Did you guys forget that the US is about everybody making big money?

Here's what things look like over here. The emergence of the Web as a viable business medium has brought out every entrepreneurial instinct in every cell of every living American. We all knew, intuitively, that for the thing to live it was going to have to be made to pay. And making things pay has always been an American forte.

So what's happening is that all these bright, young people, are seeing an opportunity to slip past the big corporations. The corporations were caught flat-footed for a couple of years, but they've now applied the most effective tool in their armoury: 'When



caught with your pants down, buy out the competition.' So we have big corporations with dens of maverick Internet geeks competing with teeming millions of as-yet-unbought maverick Internet geeks. The result is an industry whose health and growth potential beggar description.

So it's not any group decision or national strategy that creates US hegemony on the Web. It's just plain old entrepreneurship.

Anyway, you're right in your concern about smaller national Internet players being steamrollered. My advice? Quit being a national player. The atomistic

approach works fine over here. Of course, there's that little problem of social justice and fairness and all that. We've never figured that one out, have we?

James McKenna, USA

arcadia@one.net

Magazine 30, May 1997, page 32) contained a piece of real cheek. "We feel it's not fair to ask consumers to wait," said the spokesman. I've been waiting since January to upgrade my Sportster Voice fax modem to 56K, having bought it in November.

I understand that testing a new technology takes time, but I don't understand why companies, such as USR, are reluctant to be straight on developments cycles.

Tony Balacs

tbalacs@netcomuk.co.uk

Gail Robinson replies: We spoke to the folks at US Robotics and, yes, they're still finalising the testing of the x2 code. Apparently, the field testing has been carried out successfully in other European countries and should be concluded in the UK by the time you read this.

Of course, the potential takeover by 3Com can't have helped matters too much but US Robotics has been tardy in its delivery of the upgrade.

X2 performance results

File name	Size	V34+ time	X2 time	%age faster
DIAL40.ZIP	345,711	87	60	31%
IEV262.ZIP	2,561,932	676	473	30%

The size of the files is measured in bytes and the time in seconds

Mike Bracken replies: Plenty of US entities are doing the 'seeing.' As well as the Global Internet Project, there are well established lobbying groups in Congress and powerful telecoms organisations such as the telecommunications industry authority. In the UK, it's refreshing to see organisations like InterForum spring up, but even bodies like this rely on US-based firms.

Even if 'the business of America is business' I have to disagree with your view of national strategy. US regulations on policies - encryption, security, censorship, ratings - undoubtedly help US businesses express their entrepreneurial ability.

We need to take on both these regulations and these companies and mould them to a Net-based model that better suits both the UK and federal Europe. I don't believe that US national policies on telecoms deregulation and the avowedly free-market model the Net promotes is entirely suitable for a Balkanised European network infrastructure.



James gets this splendid Uni leather-bound writing set, packed with its colourful rollerball range. Every letter we publish also gets a packet of three high-fashion, zesty, bright Uni Eye 157 rollerballs. They're stainless steel-tipped, waterproof, fade resistant and have the smoothest ink flow around. For more details, see www.uni-pen.co.uk.

● Please include your name and address in any correspondence.

X2 speed query

I was reading your review of a 56.6 modem with interest (*Internet Magazine* 31, June 1997, page 72). I was amazed by the performance figures. The new X2 modem downloaded a 2.5Mb file in about 48 second, according to the graph. That means, transfer rates of $(2.5 \times 1024 \times 1024 \times 8) / (48 \times 1024) = 426.66$ Kbps were being achieved, about 7.5 times greater than the specification of the modem.

If the results are true, I'll be upgrading straight away as my 28.8 modem currently takes 825 seconds to download a 2.5Mb file.

Chris Shaw

cs@mail.enterprise.net

Gail Robinson replies: In the table below you'll find the US Robotics Courier V. Everything x2 tests in full. As we stated in our review, the difference in download times between V34+ and x2 is around 30 per cent.

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A Net for the people

For all its so-called egalitarianism, the Net isn't nearly as mass market as it should be. **David Atkinson** wants an end to the in-jokes, the snobbery and the elitism

Okay, I admit it. When it comes to buying albums and going to films, I'm an inveterate snob. Try and get me down to the latest Stallone blockbuster and you're on your own, buddy. Buy me a George Michael album for my birthday and it'll be back to the shop before you know it. When it comes to overly sentimental Americanised trash or knickers-off music for the over-30s, I'm proud of my self-imposed cultural myopia and make no apology for it.

My own private snobbery is nothing, however, compared to the conceit I've seen within the industry when it comes

to explaining the Net to the general public. The marketing men, the Web-heads, even some of the journalists, get a strange glazed look on their faces if you ask them to explain the Net without jargon. It's as if you've asked them to do something unspeakable with their mother and a small Jack Russell. It's a look that says get thee behind me, great offline unwashed, for we are, as Suede might say, the 'Beautiful Ones'.

It's strange, really. Call me radical, but it strikes me that the whole concept behind the Internet – its very *raison d'être* – is to provide a means of communication, a source of information and an outlet for entertainment for the

man and woman on the Clapham omnibus to use in their everyday lives.

So why, then, do the people who hold the Net's future in their hands not strive to make it more accessible to the public? A cynic would suggest it's because they're too busy fostering a cliquey, in-joke attitude and a bad-smell-under-the-nose policy towards the public, while lining their own pockets in the process.

Research published last month by BMRB suggests the Net is increasingly becoming a mass market product. The number of consumers coming online has increased by 75 per cent year-on-year to 3.4 million. BMRB predicts 40

"Netizens seem to enjoy the feeling they belong to some inner circle"

per cent of the population will be online by the year 2000. But research by the Henley Centre suggests the Net is still not consumer friendly and needs to reinvent itself before making the transition to the mass market.

Here lies the problem. Netizens, as they rather arrogantly like to be called, seem to enjoy the feeling that they belong to some inner circle, a chosen few disciples who have seen the light. It's a bit like the Ku Klux Klan or members of the Bobby Davro fan club. They feel the need to protect the Net from the unclean browsers of the proletariat.

Far from breaking down the Net stereotype and celebrating its potential, they're turning the public off the Net before WebTV, consumer-friendly software and jargon-busting helplines can even make their presence felt.

Virgin Net has come in for a lot of stick about its service, some of it

deservedly so. Sure, it needs to work on the site's design and content, but its ethos, I contend, is fundamentally sound. Virgin Net eschews the latest downloads and all-singing, all-dancing, always-breaking-down plug-ins in favour of straight, no-nonsense, no-thrills service that works and that ordinary people – people who don't get turned on at the prospect of an all-night IRC session – can readily understand.

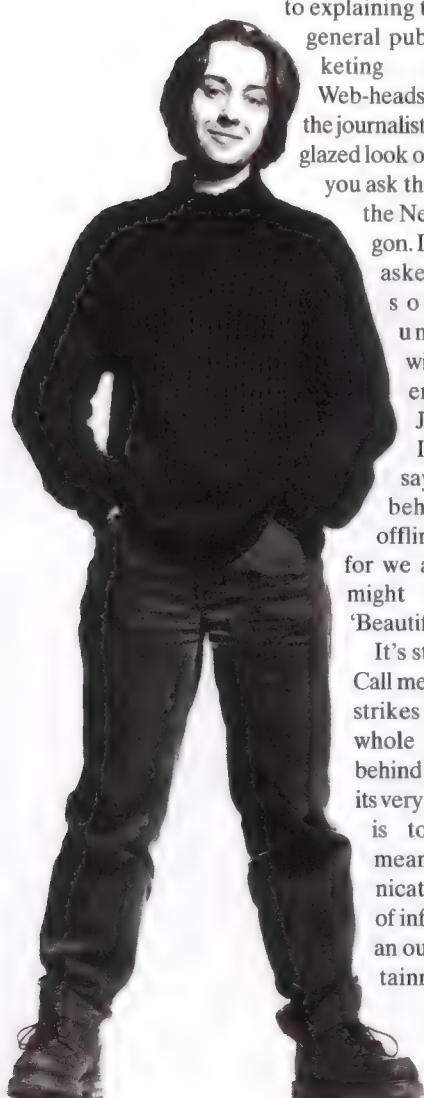
Well, knock me down with a pair of Bill Gates's soiled underpants. The people at Virgin Net could be onto something here. What they've grasped is that your average first-timer just wants to send some email and have a quick look around the Web. What's more, they don't want to be made to feel like they've joined a remedial class. Try phoning the CompuServe or Demon help lines. If you ever do get through

then you'll need a PhD in astro physics to answer any of the questions you're likely to get hit with by the tech support department.

Trevor Beattie, enfant terrible of the advertising world, creative director of GGT advertising and occasional *Guardian* columnist, has the right idea: "There's nowhere near enough creativity on the Net. It's dull," he told me recently. "It should be seen like a mobile phone, a piece of technology that becomes integrated into everyday use."

Good work, Trevor. I'd like to see the industry making an effort to take the Internet to the people rather than locking it away like some techno-slave, a plaything for those with not enough personality. And that means an appreciation on behalf of government, telecoms companies and the various strands of the Internet industry that future trends will be decided by the consumer, not the corporate wall planner.

David Atkinson is a staff reporter at *Internet Magazine*. You can email him at davida@internet.emap.com



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Geeks are innocent

Depicting Web developers as nerds and geeks is a short-sighted reaction encouraged by media moguls who want to break the Net down into manageable chunks. Mike Bracken points a finger at the finger pointers

From the highest government departments to the most ignorant tabloid hack, the Net is currently the focus of the kind of criticism usually reserved for lesser royalty and managers of the England football team. As Fergie and Bobby Robson both discovered, being the scapegoat for the perceived failings of national institutions – the Royal Family and the English team respectively – isn't a job for the faint-hearted.

The repeated calls for censorship and centralised control, the vilification of nerds and geeks, and a natural suspicion of technology made the Internet an easy target. The deeper problem is that the Net, by virtue of its communitarian creation has no natural leaders to answer back on its behalf.

This lack of a public figurehead is what many public commentators loathe. The Net seems unable to offer a credible industry spokesman, and for this sin, it's the nerds and geeks, the unassuming creators of the medium, who get it in the neck.

Let's get a few things straight. The Net is a loose data network protocol that's taken years of quick fixes to connect disparate networks. Yet, because of the selflessness of its creators – nerds and geeks if you will – it's managed to provide a consistent interface globally. Given its piece meal structure the Internet's growth has been sensational.

But now it faces a huge challenge. Old media is moving in, and it's demanding changes. New consumer Net devices need to be idiot-proof, so much so that anyone can send an email via a handset that controls their TV. The birth of BIB (see news), the joint venture from BSkyB, BT and others, is one of the first attempts to offer cheap and cheerful Net access via set-top boxes.

Yet if these devices work in their proposed form, the Net's importance will be diluted. As the incoming bandwidth, via cable or satellite, will far outstrip the bandwidth going out, new Net users will have little chance to interact. Push channels will take precedence

Net fashion, to seek a happy medium via new protocols and open standards. This means the IT community and the broadcast media have to talk to each other. The collapse of the NewsCorp/PointCast deal and the disaster that was Interactive TV seems to have halted this option. The second course is to vilify the Net's creators.

True, the occasional descent into code speak can breed a sense of exclusivity, but there are many more issues to get worried about. The limits on encryption that hold back Net commerce; BT's Net policies; the government's tardiness over Net-based education; hardware companies unwillingness to build in Net access to next generation digital TVs; the myopic cable industries' inability to provide bandwidth in both directions when wiring up the nation's homes. The list of culprits goes on and on.

What we need is a participatory model of Net media, but it won't exist until all parties accept that the medium is stronger in one piece than in thousands of tiny online fiefdoms. Castigating the one group which has done something constructive is at best ignorant, at worst culpable. Every industry has its own insider-speak, and Net developers are no different. What do you expect programmers to speak: urdu?

If this stubborn refusal to look at the bigger picture continues, it won't be too long before media watering holes are home to a new generation of hacks, who bemoan the media barons grip over online media. By this point, castigating spotty nerds and unsociable geeks will be irrelevant, as we'll all be playing in a whole new ball game.

Mike Bracken is deputy editor of *Internet Magazine*. You can email him at mikebr@internet.emap.com



"The medium is stronger in one piece than in 1,000s of tiny online fiefdoms"

over plain Web sites, and the ability to communicate with other Net users will be limited. When the keeper of the gateway, the point your outbound Net traffic has to pass through, also has a vested interest in making sure you stay within certain content areas it also provides, the next logical step is that your ability to access all the Net will be constrained.

Murdoch's LineOne offers few methods of leaving what's becoming a closed service based on Internet technologies. Microsoft, and particularly MSN, seem destined to extend the Internet into Windows, not the other way around. Old media demands defined markets, focussed content and targeted advertising – the staples of existing commercial media. These were not part of the plan when the Net protocols were being developed, and in many ways they're anathema to the Net.

Given this paradox there are two courses of action. The first is, in typical

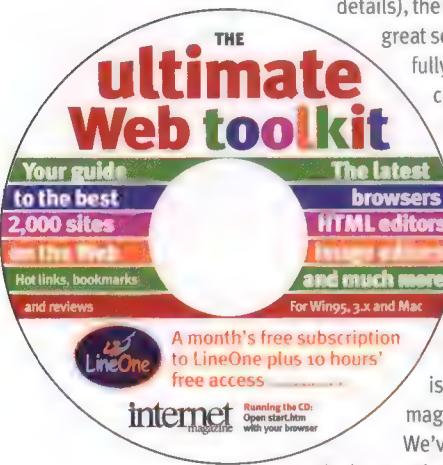
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We'll be keeping the Toolkit up-to-date, as and when we come across what we consider to be best-of-breed packages. So if you find an Internet tool or utility that you use all the time and consider invaluable, let us know – we'll take a look and, if we agree with you, we'll include it on a future CD.



In the Toolkit

In the Toolkit this month, you'll find the latest incarnation of Netscape Navigator and Internet Explorer for both Windows and Macintosh platforms.

Our Mac friends will find SQL databases, application development and Web server software, while our Windows buddies get a lovely little utility, Net.Jet, which boosts the speed of your browsing six-fold! You can also try out *Tierra* Highlights 2 for offline reading and *VET 95 Lite* for keeping out those nasty viruses.

And it's not all software, you know. You can also read all of the Tried & Tested reviews for the past six months. Alternatively you can work your way through reviews of more than 2,000 Web sites from our Essential Viewing database. This month we've also added four Site of the Month features – *Drex World*, *GE97*, *New Car Net* and the totally tropical *Malibu Island*.

Getting started

As with previous CDs, we wrote the disc using HTML, so you'll need to open the file START.HTM using your browser. If you don't have a browser installed you can simply open the CD, go to the Toolkit directory and install either Internet Explorer 3.0 (CD directory/toolkit/win95/msie302r.exe) or Netscape Communicator 4b5 (CD directory/toolkit/c32e4ob5.exe).

LineOne

More news, more facts, more fun

Try LineOne for free

On July's cover CD you'll find one month's free subscription to the online service LineOne, plus 10 hours' free access time.

What LineOne offers its users

LineOne, the new UK Internet service from BT and News International, has something for everyone. This includes news and sport from Sky and the UK's top newspapers, local what's-on listings, forums, computer games and reference information.

LineOne uses BT's backbone to provide fast and easy access to the Net. You also get LineOne's unique intelligent agent, AJ, to show you around.

What it would normally cost you to use LineOne

Unlimited access to LineOne and the Internet would normally set you back £14.95 per month. This price includes five email addresses.

To install the line one software, choose LineOne from *The Ultimate Web Toolkit* CD-ROM's main contents menu.



What you'll need to run LineOne

- A PC with a 486 processor or above running Windows 95
- A minimum of 8Mb RAM
- A minimum of 16Mb free on your hard disk space, or 145Mb if you want to install all the multiplayer games
- A modem, preferably one that runs at a speed of 28.8Kbps or higher

Windows 3.x users and floppy lovers, take note!

The CD contains Windows 95 software only. (Sorry, Mac users!) If you'd like the software for Windows 3.x or on a floppy disk, call (0800) 111 210 and LineOne will send the relevant version out to you. Because floppies have limited space, the disk version will have no animated multimedia guide to LineOne and the Internet, nor any games software.

What you'll need to do to register with LineOne

Registering for LineOne is simple. All you have to do is follow the on-screen instructions and in a matter of minutes you'll be a LineOne member. Please have the following information to hand:

- The start-up code, which is A0004CI.
- Your payment details, which can either be your credit-card number or your bank-account details.

LineOne accepts both Mastercard and Visa as well as direct debit from banks.

- A LineOne user name that you choose. This will form part of your email address. For example, if you choose the user name **john.smith**, your email address will be **john.smith@LineOne.net**
- A password that you choose, and a security word, which you'll need for an extra level of security. Every time you access LineOne, you'll have to enter your user name and password.

You'll only be asked for your security word if you call the LineOne customer services helpline to change your details or query your account. Keep a record of your user name, password and security word in a safe place.

Important – users of other ISPs, please read...

If you have any other Internet service providers' software installed on your computer, it's essential that you call LineOne's customer service advisors on (0345) 777 464 before you install the software. LineOne software and other Internet service providers' software may clash.

BT Internet and Pipex Dial users, please read...

BT Internet and Pipex Dial users should ring the LineOne customer services helpline for guidance in connect-

ing to LineOne using their existing connection software.

LineOne pricing

- Access to LineOne and the Net costs £9.95 for five hours' free access per month. Thereafter it costs £1.50 per hour.
- If you only want to access LineOne-specific content (ideal, if you already have Internet and email facilities), then the service will cost £6.95 per month. To register, go to www.LineOne.net/.

Please note...

You can't use the free trial offer in conjunction with any other LineOne offer.

The LineOne customer services helpline

If you need help with installation or registration, call the LineOne customer services helpline on (0345) 777 464. It's open from 8am to 10pm Monday to Saturday and 10am to 10pm on Sundays.

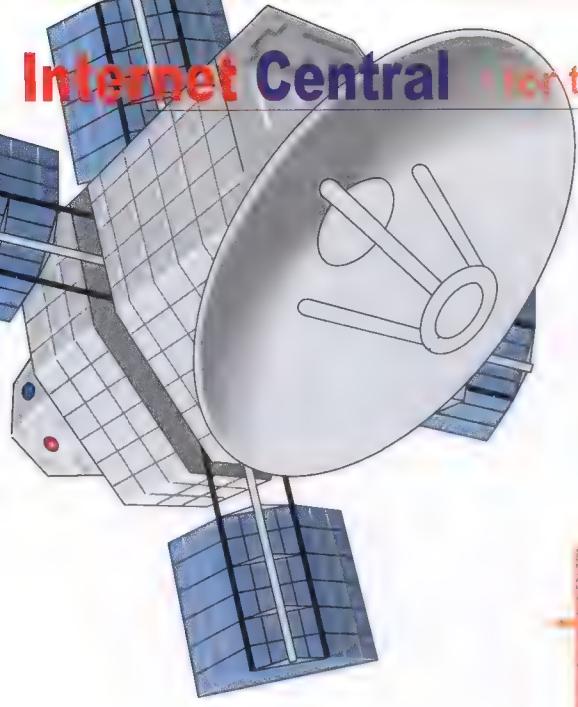


How to get in touch with LineOne

LineOne Help Desk
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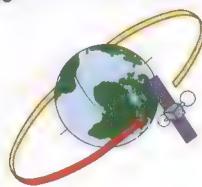
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NOTE: Does not include the cost of the local call.

If you don't have a K56flex compatible modem then Internet Central can supply one from stock.
External K56 flex modem £172 (including VAT). Add £8.00 post & packing.

Alternatively you could save £20 by purchasing a modem as part of a one year bundle.
This bundle includes the access package, a K56 modem and a 12 month Internet subscription.

Bundle:1 £360* Bundle 2: £318* Bundle 3: £290*

*The bundle package number relates to the access tariffs above and includes VAT. Add £8 P&P

Internet Central - for the Serious User interested in **FAST** performance

Each month you can find new Internet Service Providers, and each month the existing ones are either acquiring growing numbers of user accounts or going out of business unable to keep up with the big players.

Internet Central has been in business for two years, concentrating on providing a quality service to business and personal users alike.

More importantly the people at Internet Central have directed their efforts into grappling with the user problem of speed of performance. Actually since Internet Central started up 25 months ago it has been in the top 10 performance rated providers over 50% of the time. Rather than expending money on advertising and adding more and more users to an under performing system, Internet Central has been evaluating ways of providing users with new and innovative state of the art high speed connections.

Satellite Link

This month Internet Central has launched its satellite link package called DirecPC™. This service not only provides users with download rates four times greater than a 128Kb/s ISDN line (15 times faster than a 33k modem), but is also dramatically cheaper to install and to be connected to a provider.

The satellite link is simple to install and can be compared to having Sky television installed in your home. The hardware provided with

DirecPC™ is a 60cm dish and a card that fits into a spare slot in your PC (486 or Pentium). The dish is mounted externally to your building and pointed South, this is then connected via Coax to your PC card.

Once your user name and password has been logged with the satellite (which is done the same day as requested) you are in a position to use the service. The system uses your existing modem (28K or faster) to transmit your request to the web and returns all the data requested direct to your PC via satellite at 400Kb/s.

Downloading via the satellite speeds up the process as compared to a 33k modem by a factor of over 15.

The DirecPC™ 30 package provides you with 30MB (200MB with DirecPC™ 200) of free satellite download per month, each extra megabyte over and above the first 30MB (200MB) costs 50 Pence which from the calculation shown is about twice the price of the land line modem charge.

DirecPC™ packages with unlimited download time are available, ask our sales team for details.

Time to download 10MB:

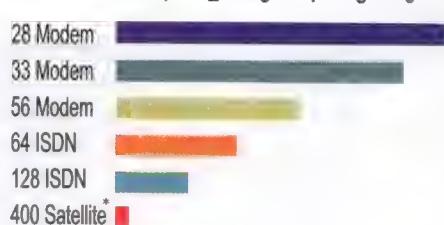
28.8Kb modem - average data rate: 2.5kbps
66 minutes at 3.95p/min = £2.60

DirecPC™ - average data rate: 75kbps
2 minutes at 50p/MB = £5.00

Time saved: 1 hour 4 minutes (approx)
Additional cost = £2.40

(if you have used the included 30 or 200MB)

1 MB file - download time in minutes



* DirecPC™

The only serious option

From this example it can be seen that if you value your time at less than £2.40 per hour then it would be cheaper to download the file via your standard modem, providing you have the patience and the line doesn't go down halfway through the download. But for the business user or even a serious home user it is clear that with increased Internet use, more and more traffic and file sizes growing as companies develop their Web sites - the satellite link is the only serious option.

Internet Central is the first company in the UK to offer this service.

Internet Central have been working on this project for some time they are likely to be the ones that get you linked up with the least hassle.

Leased Lines

from 64Kb/s to 2Mb/s



ISDN Access

64 or 128 ISDN

Internet Central can provide ISDN and Leased Line installation and connection.

This package includes the installation of ISDN2 at your office or home, the supply of an external ISDN Terminal Adapter and the service provision by Internet Central.

ISDN speed	64Kb/s	128Kb/s
Per month:	£25	£40
Hardware & Installation:	£528*	£528*

* Includes £199 to BT for line installation.

NOTE: The prices quoted do not include the costs of the line rental or calls made.
The current call charges for ISDN is that of a normal phone line.
Payable to your communications provider e.g. BT, Cable

Leased Line speed 64Kb/s to 2Mb/s

From £3,500 per year

NOTE: Leased lines do not incur call charges.



If you are interested in Killer Application Speeds, talk to our technical support about our Professional user packages providing 400Kb/s communication to the Internet via Satellite:

DirecPC™ package	30	200
	Basic	Professional

Per month: £40 £125

Hardware & Installation: £925 £925

NOTE: The prices quoted are for a single user include 30MB and 200MB per month data transmission via satellite, thereafter up to 50p for each MB. Other packages up to 5GB are available.
The system requires the use of a standard modem to transmit to the Internet from your PC.
Standard telephone calls are not included in the above package:
Payable to your communications provider e.g. BT, Cable

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Email



Email is the most commonly used Internet tool, and a new generation of companies are trying to make sure you can access your mail anywhere, anytime, and for free!

Mike Bracken looks at these services, and **Paul Smith** picks the best hand-held device for sending and receiving email

mail tales

Illustration
by Chris Robson

I can't control the volume on my speakers. This isn't usually a problem—but it constantly amuses my work mates when I log onto AOL to hear the voice of Joanna Lumley boom: "You have post." Surprising as this is, and as hilarious as it is to my workmates, this shock is nothing compared to the overall statistics on email usage. AOL delivers eight million email messages every day. MSN recently doubled its mailserver capacity by a factor of nine to cope with increased usage. If you take 30 million as a conservative estimate of the number of Web users, and presume that each user sends two mail messages a day, that's nearly 22 thousand million (22,000,000,000,000) mail messages per year. Now *that's* Absolutely Fabulous.

As targeted mail, spam mail and inbox direct mail options proliferate, the amount of email floating around the ether is

multiplying exponentially. Not only is the use of mail increasing, but so are its various incarnations. We're already well past the days of straight ASCII text messages being bounced around the ether. Email can now contain full HTML pages so that it can be read in a browser. Attaching files and applications to messages is a doddle and the range of short messaging services and remote mail packages is astonishingly large.

And yet, second only to Net access, the major source of grumbling comes from Net users trying to pick up email. Despite offering a variety of features from text to HTML conversion and LDAP support so you can find anyone on the Net, the two most salient criticisms of email are that it's difficult to pick up remotely, and that, as yet, no email-specific

devices exist that can be easily used while you're on the move.

Setting up a remote email connection has been well documented already (see *Internet Magazine* 25, December 96, page 69). However, a host of new products and services use email forwarding and remote access to hook users in by the thousands.

These services, sometimes referred to as 'freemailers', are the new booming businesses on the Web. With many users complaining about the difficulty of setting up POP3 mail accounts and remote connections, these companies have prospered because they're so simple.

Free email

One of the first freemailers was Bigfoot. Established by entrepreneur Lenny Barshack, Bigfoot is a free directory service that depends on users registering online. With tens of thousands of registered names, Bigfoot has the largest collection of email addresses and yellow-page-like listings on the Net.

Although Bigfoot doesn't host mail itself – you can't dial into its site and pick up your mail – it uses its directory to help you find people, and offers a range of forwarding services. You can forward all existing mail to it and it will,

in turn, forward it to up to five accounts. You can also consolidate mail from

your various email accounts into one Bigfoot digest, and take advantage of reminder and auto responder services. For an added fee, Bigfoot mail can even be forwarded to your pager.

It's only lately that these directory and email forwarding services have expanded to Web-based mail hosting services. Hotmail, a freemailer that relies on advertising revenues, has now added WebCourier, its Web hosting service. You just dial into the Hotmail site, enter your user

name and password, and pick up your mail. WebCourier offers a limited set of features similar to those you'll find in conventional email software. You can have folders for mail, an address book, a signature file and preferences, and you can apply filters. You can also forward mail from existing POP3 accounts to your Hotmail account. And you can receive full Web pages, not just email messages, from sites that offer Inbox Direct-type services.

Rocketmail, from leading directory company Four11, is possibly the most advanced of these services. As well as supporting directory search services, its Web-based email already includes spellchecking, folders, signature blocks and POP access. Most interestingly, Rocketmail also supports multimedia attachments, so you can send

more than just text.

PEmail

Despite widespread scepticism over the viability of these mail-forwarding services, one entrepreneur with an outstanding Net pedigree is convinced that email has yet to enter the mainstream market. Simon Gryce, managing direc-

"The idea of pay as you go marks a shift for Internet services"

Piers Vaughan, freeMAIL Ltd

Picking up your email remotely

With the Psion Organiser and the US Robotics Pilot leading the way in the palmtop computing market, looks at what they have to offer the remote email user

The PalmPilot

After a very slow start, the PDA market has woken up – to wit, Microsoft's interest in backing the so-far disastrous Windows CE platform, and Psion's valiant, if highly localised, efforts. But the product that comes closest to the ideal of letting you carry your data around when you're out of the office is the US Robotics Pilot.

About the size of a pack of cigarettes, the Pilot is light and perfectly designed to keep your important data – contacts, diary, to dos – with you. It's already been a success in the US, winning 70 per cent of the handheld market.

The beauty of the Pilot is the ease with which it synchronises information. Everything you need comes in the box, including cradle, cable and

software (for which Psion is pleased to charge you some £70+). Once set up, all you do is push a button on the cradle and sit back. You can synchronise with your favourite organiser, too: Outlook, Schedule+, Organizer, SideKick, Maximizer are all supported by third-party synchronisers from Dataviz and Puma.

The latest PDA incarnation, the PalmPilot Pro, contains two exciting new features that show how the device could develop. The new Pro version lets you synchronise with your email application (as long as it's Microsoft Mail or Lotus cc:Mail,

although more are promised). Now you can read, reply and delete email while you're away from your desk. When you next sync up, all the actions, replies, new emails, and deletions will be carried out.

But, given the Pilot's parentage, the Pilot is, to date, a tad off-line. It has a cable that lets you plug the Pilot into a modem, call your PC and synchronise remotely but it doesn't come with any applications. A clip-on modem, due this summer, will do the same. And network software lets you call into your network's remote access service and sync that way.

But it's the new PalmPilot's built-in TCP/IP that will lead the Pilot into a full-blown connected life. USR plans to promote the PalmOS as a universal palmtop OS, so that other people can write applications for whatever device is running the PalmOS.

An early example of this is HandStamp, a complete email application. Supporting SMTP, POP3, PPP, APOP, CHAP and PAP, it offers fully configurable connectivity, ease of use and security, all in 63Kb. HandStamp works on any Pilot.



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tor at Business Objects and ex-CERN HTML pioneer, recently launched PEmail, a UK-based mail service that aims to give cheap and easy access to email anywhere in the world. You register a PEmail address and use this as a holding account while on the move, or as your main email account.

The system is designed for simplicity. "I can't believe everyone is still talking about the Internet. It's the applications that reside on it that should be getting the attention," claims Gryce.

PEmail is unashamedly a consumer service. It's POP3 and Mail4 compliant, so you can access your email via a browser or an email client. You can also maintain an address book on the service. As in real life, different mail addresses can be ascribed nicknames, so instead of sending a mail message to `mailto:someone@pemail.net`, you just type in 'mum' and the PEmail mailserver will recognise the alias.

The Pilot is already a fabulous product, but its future is even brighter. It's early days, and already the Pilot can do many of things that people need from a PDA.

Psion Series 3c

If the Pilot is primarily a data repository, a portable electronic diary, the Psion is a fully-fledged computer. And, where the Pilot was built with connectivity in mind, the Psion concept is aimed at standalone use: desktop synchronisation is expensive and clunky.

But after 10 years of development, the Psion has achieved a certain maturity. The recently-launched Series 3c model has a built-in TCP/IP stack, making remote email and other Internet applications simple. There's a fax/modem that allows connection directly to a phone socket, and a cable to connect to a cellular phone is promised.

The 3c lets you do many of essential online tasks. With the Travel Modem, even though it's a lugubrious 14Kbps, and software such as Psion's own PsiMail Internet package, you can set up the Psion to send and receive Internet email and browse the Web.

There's no shortage of free Web-based email services...

Unlike the freemail services, PEmail charges £20 per year. As well as providing a revenue stream, Gryce claims that the charge also discourages users from creating multiple accounts and skewing the overall user base. "Bigfoot is an email directory that's incredibly useless. It needs a more intuitive engine that's based on what you know about the users" he says. "The proliferation of addresses also needs to be sorted out."

Unless you want to subscribe to PsionWorld, Psion's own CompuServe-based email and Net access service, you'll have to set up your PsiMail account by hand. Although there's a Wizard to step you through this process - helping you enter details of the account you're connecting to, its DNS and IP numbers, its email host address and your account details, and of course the phone number to dial - you're bound to find yourself tweaking the set up to accommodate the very different ways that IAPs log you on to their systems.

One way that Psion can help is by providing IAP-specific templates, but almost none are shipped in the box (which was put together without the templates being ready). Some of the UK's largest IAPs are covered in the set that's available on Psion's Web page, but this implies that you've another means of access to the Net.

Hand-configuring involves scripting. It's not difficult and it's generally multiple choice-based,

but you can't edit the files on your PC and then download them into the Psion: you have to use the built-in script editor.

Once up and running, however, it works. Not only can you send and receive email - including attachments - but you can also browse the Web, with or without graphics. This gives you true handheld, fixed-link browsing, one of the first palmtop devices to offer this feature.

The future of the Psion is one of the most interesting questions in the PDA world: a company only really successful in the UK, with a device that has had 10 years to set the pace. With a new Psion around the corner, the users' demands for built-in cellular communications are loud but unlikely to be satisfied.

The future looks bright

There's an enormous amount of development going on in the handheld market. The ideal of a fully functional, handheld, wireless Internet device is just around the corner. Over the page is a road map between now and that corner.



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dominant communication form worldwide, yet this will only happen once the technology companies and services look at email from the end users' perspective. "At the moment it isn't possible always to reach an individual. It's a fundamental problem of the communications industry. A growing number of mediums and addressing systems results in an unsatisfactory way of addressing people.

"There's a diversification of messaging services. We'll even have radio based email soon—digital broadcasting on radio bands—so that your car stereo will be able to receive messages. These new varieties of email have to be more user-friendly than the existing email services."

Despite a vested interest in PEmail, Gryce is more concerned that email standards develop along open lines so the market for new products expands. "We've got millions of people about to use the Internet. We can get 500 companies each with a million email subscribers—the marketplace is so vast. Technology is finally reaching the person in the street."

Freemail

Several services and products have the rights to the name freemail, but a new UK service, freeMAIL Ltd, is one of the

first of these user-friendly niche email services Gryce foresaw. The freeMAIL argument is simple. Many users only want email but are lumbered with a £10-a-month bill for access despite being online for a negligible amount of time. freeMAIL Ltd opens an account for free and you pay by your phone bill, via a 0891 number, at 50p per minute.

Companies can use the service for a poll, a promotion or a mail shot—without the hassles of hosting and name registration. You get no Web access, just email and thankfully there's no advertising in messages. "All IAPs offer access on the basis of a fixed fee. We dub them 'post-CompuServe man,'" claims Piers Vaughan, MD of freeMAIL. "The idea of pay as you go marks a shift for Internet services."

A mark of the future for email comes from JFAX, which allows you to receive voice, fax and mail in your email inbox. Using JFAX you can open virtual offices around the world based on a single email address. Whatever the future of email, two predictions will prove true: there'll be more of it, and it will rely less and less on the PC.

Mike Bracken (mikebr@internet.emap.com) is deputy editor of *Internet Magazine*. **Paul Smith** (pauls@computing.emap.co.uk) is editor of *What Personal Computer*.

The future of remote email

For a USR product, the Pilot is poorly connected. It's got a port for connecting devices but these have been slow in coming. So far, it has a cable that lets you connect to a modem and thence the Net. For the truly mobile, this is not an elegant or convenient solution: you'll have to pack an external modem, and that means a power supply and a cable too.

Due this summer is the Pilot modem, a much more elegant idea. This little box clips onto the bottom of the Pilot, adding no more than a third to its length (and no proprietary modem cable). All you do is plug any RJ-11 phone cable into the wall. Later still will be the GSM version that will connect straight to your mobile phone. This is an exciting, two-box solution.

Finally, a US company is developing a product called the Minstrel. This device, due our late summer, is about the size of the Pilot modem but has a backplane and thumb-sized aerial: it's a wireless modem. There is a rub: the Minstrel works on the CDPD cellular system that's not currently available in the UK.

The future of the Psion is different. Designed as a stand-alone device, it has had greater flexibility to develop in whatever direction Psion saw fit. Users have been clamouring for PC Card support, and for built-in cellular comms. But Psion has always been a slow developer, and its failure to buy Dancall

from Amstrad a year ago has certainly scuppered hopes of cellular comms in the next Psion.

In the meantime, the Psion Travel Modem needs a speed boost: 14.4Kbps just doesn't cut the online mustard anymore. Psion is also talking about an Ericsson mobile phone that will plug directly into the Psion—an effective two-box wireless solution.

The real winner of this race won't be the company that comes up with the sexiest device, but the one that can interest the most developers. That depends on the device's operating system—the prevalence of PalmOS, Psion's EPOC32, Apple's Newton or Microsoft's Windows CE on other devices.

Either way, the future's bright...



Useful URLs

Sites where you can find out more about remote email

Bigfoot	www.bigfoot.com/
Hotmail	www.hotmail.com/
Rocketmail/Four11	www.four11.com/
PEMail	www.pemail.com/
freeMAIL	www.freemail.co.uk
JFAX	www.jfax.com/

CAN YOU GET NET ACCESS FOR FREE? **RICHARD BAGULEY** INVESTIGATES JUST HOW MUCH YOUR TIME ONLINE IS *REALLY* GOING TO COST YOU

Every day, Internet users are bombarded with offers of free access, free time online and the like. Companies are falling over themselves to tempt users on board with all sorts of attractive offers.

However, these offers usually come with strings attached. It could be that you get a month's free access when you pay for several months in advance, or a certain amount of free time when you sign-up and hand over your credit-card details. While there are some good deals out there, it's worth approaching them

with some caution. Before signing up, it's worth checking out the conditions attached to the deal. After all, there's no such thing as a free lunch...

Paying the piper

Whatever deal you go for, you'll need to pay a price. Although many companies go to great pains to tempt you into their corporate lair, at the end of the day you'll have to hand over the dosh.

But why should you have to pay for Internet access in the first place? And how much does access really cost?

The problem is that working out how much accessing the Internet actually costs is really rather difficult. It's not simply a question of buying a few modems and sticking them in an office – it's far more complex than that. How many modems will you need? How long will people stay online? How much external bandwidth do you buy? How many people do you employ to do technical support? How do you deal with the inevitable problems of machines failing and bringing your network down?

THE BEST THINGS IN LIFE ARE **FREE!**



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These are complex calculations, but with one bottom line: to provide Internet access you need to make a significant investment in equipment and people, and the way you cover these costs – and make a profit at the same time – is by charging people to use these resources. "There's a whole range of things you have to take into account when you're setting your prices," says Ben Knox, managing director of the veteran IAP Direct Connection (www.dircon.co.uk). "Obviously you have to be competitive and manage your resources to make sure your prices remain competitive. You need to look at equipment, your bandwidth and your servers as well as the staff you need to run it all."

"You're also going to need a lot of modems, and you're going to need to keep updating your equipment as technology advances. The problem is that these days the technology is pushing towards using more and more bandwidth. While you might have been able to get away with 64Kb bandwidth a few years ago, nowadays two users would fill that up. You're probably going to need at least half a megabyte, and you're looking at between £30,000 to £40,000 for that kind of access over a year."

Talk ain't cheap

Not least amongst these resources – and one of the most important as far as the user is concerned – are the telephones customers use to connect to the IAP's network. "This is not a cheap service,"



says Ben. "The cost of our BT 0345 lines starts at around £1,500 per line per year. The more you get, the less they cost, but they're not cheap." Most IAPs now offer a service where you can connect to the Net for the cost of a local call throughout the UK through the systems supplied by British Telecom, Mercury (now part of the global Cable & Wireless company) or Energis.

It's good to talk – for BT!

The usual pricing structure for Internet access in the UK is a flat monthly fee. This is very different to the US, where most companies charge on a per hour of use basis. The difference is in the telephone systems. In the US, the majority of local calls are free, so the only fee you need to pay is to the

IAP. In the UK, you also have to pay for the telephone call.

UK IAPs can go get access to telephone lines from a number of different companies. Of course, there's British Telecom (with the dialling prefix 0345), as well as Energis (0845) and Cable & Wireless (0645). All of these companies provide essentially the same service – the customer can dial in from anywhere on the UK mainland for the cost of a local phone call, and the call is delivered to the IAP's network. Most of these calls end up at Telehouse, a large building in London's Docklands where access providers can rent space and tap into a very fast backbone. Many IAPs also belong to LINX (the London Internet eXchange), a body which provides a central location for IAPs to

**"You
need to keep
updating your
equipment"**

*Ben Knox,
Direct Connection*

Coming soon to an Internet near you...

Accessing the Internet by satellite seems to have been a bit of a science fiction dream, but it's rapidly becoming a reality. Hughes Olivetti Telecom has recently launched its DirecPC service in the UK, where data is sent to the user via a satellite 38,000 miles away.

This is an extremely fast way of sending data you get speeds of up to 40kbps (which compares favourably to the 3 to 4kbps you can expect from a 33.6 modem). You can get more details from www.hotelu.com/ukframes/direc.htm.

However, this service isn't cheap. You'll need a satellite dish and a decoder card (together these cost around £1,150), on top of the monthly subscription fee. If you download more than 30Mb in a month, you also have to pay a fairly hefty 83p per Mb surcharge, so it's hardly a cheap solution to the problem of slow downloads...

Cable modems are another technology being touted as a new way to access the Internet for less. They're designed to connect directly into the digital network of a cable company, and so you get much higher connection speeds – in theory, up to 30Mb per second.

Because these modems connect directly into the digital cable network, they don't tie up telephone resources in the same way a normal modem connection would. A normal modem connection ties up an entire phone line (and thus part of the telecom operator's network) whether or not data is being sent. Computers connected by a cable modem are more like those connected to an office network – they only use up bandwidth when they're actually sending or receiving data.

But cable companies have been slow to implement cable modems. Several have carried out trials, but no company has yet committed to a wide scale roll-out of this technology. Cable Internet (www.cableinet.co.uk/) and Telewest (www.telewest.co.uk/) are currently testing cable modems in a limited area, while Nynex (www.nynex.co.uk/) is running a test with 200 customers in Manchester. "We want to see how the network copes with having many people using these modems within a concentrated area," says Joanne Wake of Nynex. "We also want to see what people want to do with these modems – what they use them for, how long they use them for and how we can shape our products around what they want."



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share international connections and exchange data that flows between them.

There's long been pressure on BT to make local calls free, but so far it's resisted these demands. However, there are indications that this policy may change at some point in the future, which would have a significant impact on the UK Internet market.

For the foreseeable future, however, it looks like UK Internet users are going to have to pay for both the phone calls and the monthly charge to access the Internet.

Money for nothing

In the US, you can access the Internet for free – as long as you don't mind putting up with a constant stream of adverts while you're browsing, and with long waits on phone lines trying to get connected.

The San José-based IAP Cyber FreeWay (part of a Japanese software company) has recently launched a service in the Bay area where users can access the Internet for no charge using its own customised software, which also displays a series of adverts. Users have to fill out a questionnaire when they set the system up, and this information is then used to determine which adverts the user gets to see.

The company hopes to make money by selling this space to advertisers. The service has been running since the start of this year, but the company hasn't yet

revealed any figures on the number of users or advertisers. You can get more details on this service from www.cyberfreeway.net.

Free access in the UK

The one group of people that has been able to access the Internet without pay-

ing the phone bill in the UK is cable telephone users.

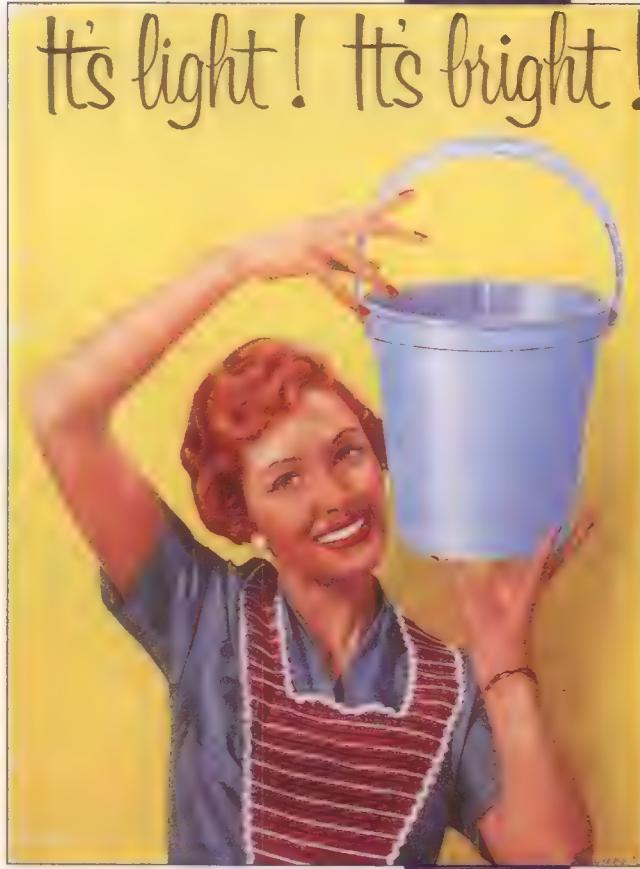
As an incentive to get people to switch from BT to cable, many cable companies have been offering free calls to other cable customers in off-peak hours. This includes many IAPs which have bought telephone lines from the cable companies. The practice now seems to be coming to an end – see the box below for more details on cable access to the Internet.

Freephone Internet

It seems unlikely that British Telecom is likely to introduce free local calls within the near future. And if BT don't introduce free local calls, it seems unlikely that other companies, such as Cable and Wireless, will do so.

Indeed, the cable companies that used to offer free calls are now going back to a normal time-based charging structure, so it seems that the days of unlimited flat-rate Internet access in the UK may have ended before they even really began...

Richard Baguley (baggers@baggers.com) is a freelance writer who specialises in that newfangled Internet thang.



The Cable Factor

Several IAPs are already offering Internet access without the telephone call charge, often on a limited basis. Many IAPs have phone lines supplied by cable companies, which offer free calls during off-peak hours. Direct Connection has been offering free calls to its customers via the Videotron cable system for some time now. Meanwhile, Freeway Internet uses this as a selling point to customers within the Nynex franchise in Bradford.

These free calls often have restrictions – they're usually limited to off-peak hours and can only be made within a limited area. The choice of access provider is also limited – they can't be used to connect up to an access provider which doesn't have phone lines from the cable company.

However, it seems unlikely that this free access will continue. The cable telephone companies argue that allowing users to access the Internet for free causes them problems – users stay online for long periods, which could

cause congestion in their exchanges. "We started limited, freely enough from the access providers themselves, that Internet users would, because they could, stay on all weekend. They would connect up at 9pm on Friday and stay on all weekend," says Joanne Walker of Nynex, which has several cable franchises throughout the country. "There are some major problems developing out in the US, where Internet use is much higher than this country so we decided we should take some action to encourage people from using the network in this way. We introduced an Internet tariff for both residential and business users. For a monthly fee of £1.50, users can get a 10pm to 6am 30 per cent off our standard call rates." Calls to IAPs will no longer be free under this scheme, introduced in April, but they'll be cheaper than normal calls.

"Some people did occasionally stay online for over 24 hours, but we could cope with that, and most people used the service quite

sensibly," says Ian Parkinson, managing director of Freeway. "After our first week of operation, we had enough data to make forecasts about calling patterns and growth, using statistical analysis and simulation, and set our prices accordingly. Our forecasts were accurate, and our prices fair. Nynex and IAPs who complained about the situation simply didn't set their prices correctly for this market."

Other companies are also bringing in similar charges – Telewest introduced a similar scheme this year. So, it seems that the ability to access the Net without paying any call charges over cable connections is rapidly coming to a close.

CABLE CONTACT DETAILS:

Direct Connection	(0161) 207 2380
www.dircon.co.uk/	
Freeway	(0223) 431 313
www.freeway.co.uk/	
Telewest	16500 1858 485
www.telewest.co.uk/	

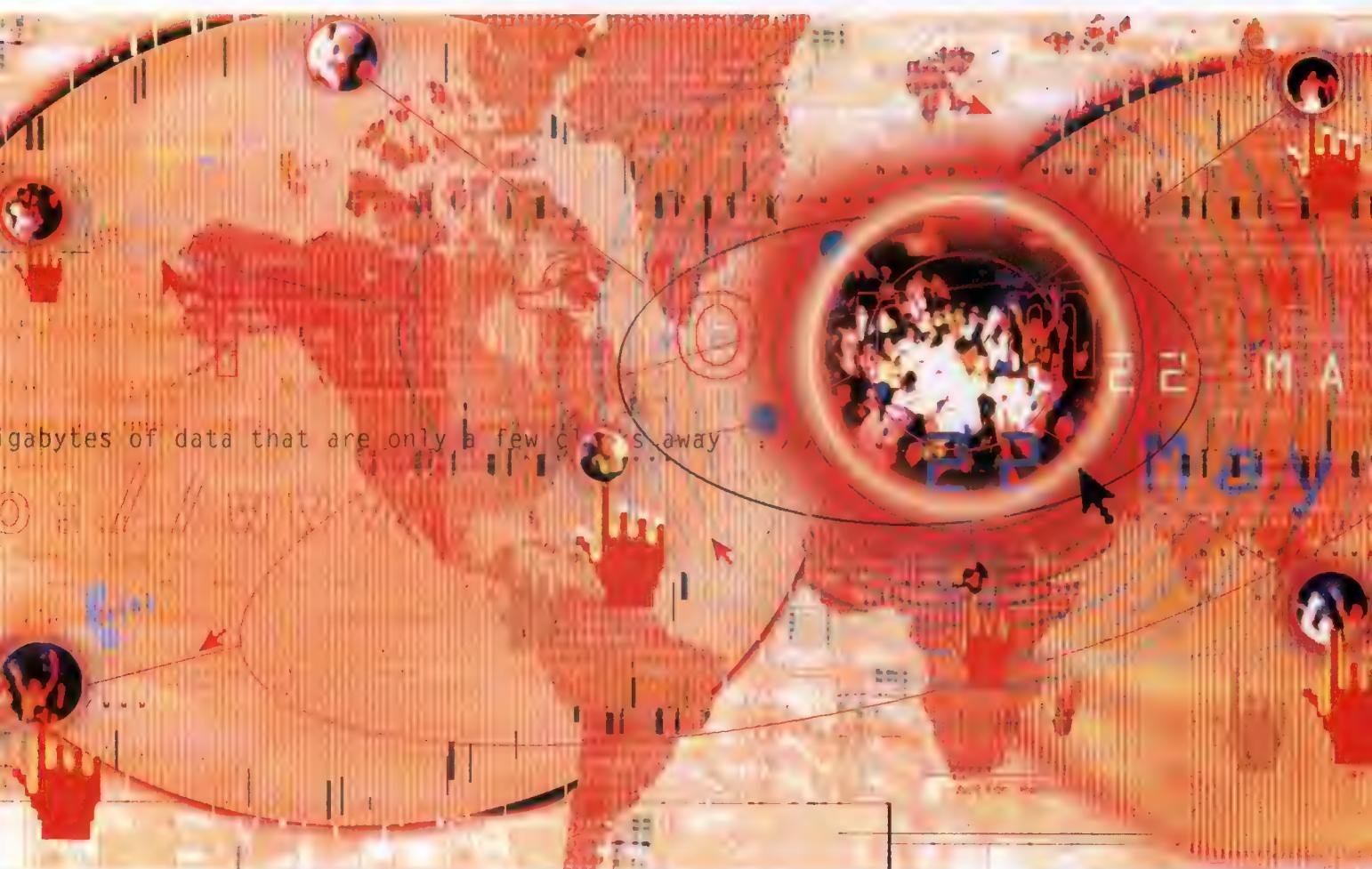
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<http://www.freepages.co.uk>





I just can't see the point of an online event," says Bill Richards, executive secretary of the Exhibition Industry Federation. "We're all human beings and we need human interaction. It's not about the event itself, it's about being there."

No atmosphere. No fun. Stuck behind your computer all day while the fans are invading the pitch at Prenton Park and Oasis are playing their last encore at Knebworth. Online events suck. Surely they're more trouble than they're worth. Apparently not!

With designers and developers clambering to find new ways to make their site the most all-singing, all-dancing, all-interactive site around, it seems that online events are becoming big business.

The biggest event in recent UK history – the general election – may not have lived up to the hype, it might not have allowed for online polling, but it did give the man on the Clapham Omnibus a new medium for gathering information. And it proved that the Net could be of some practical use.

"Events are great drivers of traffic to the passive areas of Web sites and are great for building communities," says Robin Hunt, head of the Guardian New Media Lab. "They bring people in and they tie in with the real world." The New Media Lab's Election 97 site got 1.2 million hits in eight hours on election night.

"With the World Cup next year we'll see a huge battle of event sites" *Nigel Charters, editor of BBC election site*

"It provides people with an opportunity to get much closer to an event," agrees Alastair Jeffs, producer of the GE97 site at Online Magic. GE97 got 4.8 million page accesses (about 45 million hits) over election night. "It also allows visitors to interact with the medium via discussion and chat groups."

The success of the various election sites is a testament to the true potential of the Net as a complementary medium to broadcast and print media. Which is all well and good, but these same sites also exposed new problems surrounding the process of staging events online.

"There's a huge demand for online events from communities of fans who want material to supplement the real world event with information and discussion" explains Steve Billinger, executive producer of MSN UK. "The main problem, from an editorial standpoint, is deciding what aspects of the event to transfer to the Net and how to give them a flavour of the atmosphere."

Money, money, money

So just how do you go about staging an event online? Let's start with the basics. The event may still be a distant blip on the horizon, but it's time to get your planning cap on. And even before you can plan at all, you need one thing: dosh. And lots of it.

You can choose from among three methods to generate revenue for your



All the world's a stage

Staging Web events has become the flavour of the month. David Atkinson finds out how people are doing it – and why

site: subscriptions, sponsorship or banner advertising. Given the ongoing suspicion amongst finance-wielding corporates about advertising on the Net, a combination thereof seems the best bet.

"Banner ads are beginning to grow, although there's still a perception problem as ad agencies have had their fingers burnt," says Robin. "Sponsorship has worked well so far and we've had money offered by the likes of Orange, Whitbread, BT and Opel, although competition will increase for that."

The New Media Lab's next project – an Ashes cricket site in a joint venture with Wisden – will be trying out the subscription route for the first time. Visitors will be asked to pay for a news bulletin, but this will be the only paid-for part of the site.

Online Magic opted for a combination of sponsorship and banner ads on its GE97 site, the former coming from the likes of Yahoo, Microsoft, UK Plus and CompuServe.

"It's becoming easier to get funding although it's a slow process," says Alistair. "The only way forward is to prove the Net can achieve something. I think it provides a great opportunity for

*Illustration:
Rachel Oxley*

a sponsor, especially as the event reaches its critical mass, but sponsors have to get used to seeing their brand name out there in the medium. This is only slowly being realised. People were reluctant at first but once we were up and running they were more willing to come on board."

Vauxhall sponsored the Eurosoccer Web site, which the Guardian's New Media Lab produced. Matthew Timms, new media manager at Vauxhall, reveals that "Eurosoccer was a hugely successful site for building brand awareness, and in that respect it was a worthwhile return on our initial investment. It's hard to gauge any return in a clinical way, pound for pound, but in terms of brand building and data capture it was a great success."

"We also sponsored the ITN election site, which gave us a chance to target a new specific audience. We got a very good click through from the site to Vauxhall branded pages."

Everybody back to my place
So the clients have coughed up the cash. Now you need to tell everyone about how fantastic your online event site will

be so you can generate the volume of traffic that will get you noticed and convince your financiers that all that corporate lolly has been put to good use. In the world of events, hits are where it's at – and you need lots of them.

"I'm a firm believer in 'in yer face' when it comes to promotion," says Robin. "We bought the domains general-election.com and co.uk but never used them. We just re-routed people from them to our own site. We also forged links with various publications around the world to draw in hits from overseas. The number of hits we had from coverage in an Australian newspaper was phenomenal."

"We hired a PR agency, the traditional publicity routes are still really important," adds Alastair. "Nevertheless, you do have to use both traditional and Net mediums. So we also got really active over the Net to get yet more coverage. You have to keep on surfing and find sites people use as sources of information which you can link to. Think carefully about which brand names you want to be affiliated with."

How to stage an online event

Robin Hunt from the New Media Labs; Mike Odd Hayward, designer of the Crufts site; Rob Lawrence, senior producer at Traffic Interactive; and Alastair Jeffs of Online Magic offer 20 top tips on staging the perfect event

1 It will take 40 per cent longer than you think, so start at least one month earlier than you plan to

2 Be prepared to down tools and have afternoon team sessions to build morale

3 Make sure the research team knows its subject and has a flair for it

4 Don't let people burn out. Give them space, regardless of deadlines

5 Book your holidays for the day after it's over

6 Build up slowly. People are forgiving, so put the site up, get people hooked and then build up content

7 Focus on ways to get people to interact, get feedback and keep 'em coming back

8 Get a framework up and running well before the event starts

9 Don't try to reproduce the event perfectly; visitors are looking for something extra online

10 Be creative in what you do. Use the medium to your advantage

11 Get publicity for your online event by getting the URL featured in the media campaign. Events have a natural press momentum of their own, so roll with it

12 Put a disclaimer on the site in case things go pear-shaped

13 Make sure you're on BT's case about your connection. Threaten them with Mercury if necessary

14 Always check your computers. Otherwise it's like going camping without any tent pegs

15 Don't put the event online for the sake of it. Do it for a good reason

16 Overestimate your traffic because you need a very strong server and lots of bandwidth

17 Live and breathe your Web site. Always think that someone, somewhere in the world, is looking at it, so keep it fresh, current and correct

18 Get some stars on there – everyone loves a celebrity

19 Don't forget to let people see your work afterwards – think way down the road

20 Don't forget about the site once it's all over. Use it to build on in the future

The big day

So it's time. You've got thousands of surfers chomping at the browser to see your site and you've been working feverishly to get all the technology in place to knock 'em dead. RealAudio clips, streaming video, live chat sessions – it's an interactive visual feast. If you're Online Magic you might even have Paddy Ashdown sat in his office in Parliament ready for a live chat session on his laptop. What happens next? BT Net closes down access to the server and you're left with a lot of disgruntled Liberal Democrats and a battery farm's worth of egg on your face. Technology, eh?

"We did a couple of online chats around the election, which we felt made the channels more interactive and gave users a chance to see another aspect of AOL's work," says Richard Methuen, AOL UK's events manager. "Technologically it's quite straightforward. It takes about two hours to set up a one-hour interview, including discussion time. The whole thing works via instant messaging within the AOL firewall."

"We use our style e-zine Shift Control as a way to test user reactions to new technologies but we would draw the line at Shockwave and VRML for quite some time to come," says Robin. "For the election site we went for graphics-light, fast-downloading pages. People can get sound and video clips from their TV. Anything newsy has to download fast. There's a balance to strike between the design aesthetic and fast downloading."

Very true. You see, the problem when it comes to hosting online chat sessions is that your average punter may not have the latest browser technology and wouldn't know how to download a plug-in if it came up and bit them on the bottom. The moral of the story? Keep it simple.

"We designed it to make it as accessible to everyone as possible hence we used tables, not frames," says Alastair. "We didn't force people to download plug-ins."

"We'll be trying new things in the future," says Richard. "What worked well last time was a follow-up session. After the politician signed off, we brought in experts to comment on what he said."

The morning after

So how was it for you then? You wake up the next morning, the hangover kicks in and you suddenly realise you've got a massive archive of material just

Staging a dog of an event

With over 5,000 visitors each year marvelling over the canine charms of 20,000 competitors, Crufts is to dogs what Woodstock once was to hippies: one hell of a blow out.

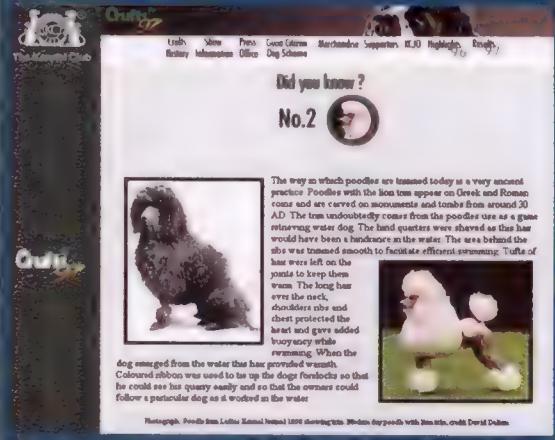
The Kennel Club of Great Britain first posted a site in 1996. The brief, according to Brian Leonard, spokesman for the Kennel Club, was twofold. "We wanted the site to reach out to Crufts followers overseas who were not able to access the results. We also wanted to appeal to a younger generation of dog lovers," he says. "We felt using the Net was the best way to achieve these aims."

Mike Odd Hayward, designer of the Crufts site from developers Keymedia in Brighton, explains the problems they faced. "We tried to create something that complemented the show. We knew we couldn't recreate the sights and sounds so we decided to concentrate on key concepts such as the updated results for breeders around the world streamed from a constantly updated database."

The developers also had to remember that they were catering for people who weren't necessarily technically minded, so the site had to be easy to navigate and not too obtrusive in its use of technology. "Next time we'd hope to present the results in an even more user-friendly fashion," says Leonard. "We're also considering creating a virtual Crufts, using VRML, and looking at ways of maintaining the site all year round."

"Next time it would be nice to bring people closer to the show using leading edge technology, such as RealAudio and video broadcasting, and applying it in a creative way," says Odd Haywood. "Still, looking back now, it all went quite smoothly considering we were co-ordinating such a big project."

www.crufts.org.uk



The Crufts site doesn't make the most of the latest technologies, such as RealAudio, but it's looking to develop the site next year

sitting there relating to an event that finished 24 hours ago. It's a tricky one. But instead of just leaving that information to fester, why not put it to good use?

"The election was a historic event in British politics," says Alastair. "We ran a news feed from the Press Association for a few weeks afterwards and had a searchable archive of news. It's a kind of time capsule. I hope people will use the site for research. This is a site where history can't be overlooked."

"We've learned our lesson: the Eurosoccer site shouldn't have been left buried, especially as it was such a

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Online events

high-cost site," says Robin. "The election site will become a political database. It will evolve into a place where politics can be discussed and will act as an archive for education and research."

The way forward

Looking into the future, Net events, having already proven their worth, are destined to become more sophisticated, with developers vying with each other to make their online event the biggest and best yet.

According to Steve Billinger, "In the mid- to long term, it's a very interesting environment within the digital world especially with the advent of WebTV. I believe entertainment will be delivered to a single screen with people watching an event in a broadcast environment but simultaneously having supplementary information around it to make it a far more compelling experience. This will be delivered to a TV, powered by a PC."

Contact details

Guardian New Media Lab
www.guardian.co.uk

Exhibitions Industry Federation
www.exhibitions.co.uk

Traffic Interactive
www.traffic.co.uk

Online Magic
www.onlinemagic.com

MSN
www.msn.com

AOL
www.aol.co.uk

BBC Online
www.bbc.co.uk

A vision of the future? Perhaps. But, more immediately, the election has marked the starting point of a steep learning curve for Web design companies wanting to stage events online.

"Given the build-up to an event, it really focuses people's minds and keeps them coming back for more," says Nigel Charters, the editor of the BBC election site. "The first sites we put up re-used material destined primarily for another medium. We're now looking at doing more Web-specific work with a view to launching a massive BBC news service online in the autumn.

"I think with the World Cup next year we'll see a huge battle between events-based Web sites, as the lessons of the election have been assimilated. Everyone thinks events are the natural way forward."

David Atkinson (davida@internet.emap.com) is a staff writer at *Internet Magazine*.

Staging the 1996 Phoenix festival

Rob Lawrence, the senior producer at Traffic Interactive, designers of the BT, Wrangler, Vladivar, Mean Fiddler and Design Council sites, explains, "Anything else is easy compared to Phoenix. We had eight dual ISDN lines and eight computers, 12 journalists, five photographers and a staff of 35 working shifts – all in a field in Staffordshire. Of 120 bands, we broadcasted every other one live using RealAudio.

"We put the framework together in advance and then built a 45Mb site on-the-fly, in the field. The biggest problem we had was the server. The worst job in a live event like this is to monitor the server hosting the site. We set up remote access to monitor the server and paid two blokes with mobile phones £1,000 each to keep an eye on things. At 2am Friday morning the server went down and they were nowhere to be seen.

"The biggest achievement for Traffic Interactive was that we survived it all. I don't know if we'd do it again. It was a huge project but it was pretty cool."

www.traffic.co.uk/goodcleanfun

Staging the General Election

Three big name sites vied for your attention on General Election night. Here's how they survived the trauma:

Guardian New Media Lab
<http://election.guardian.co.uk>
BBC www.bbc.co.uk/election97
Online Magic www.ge97.co.uk

Q What did you learn from the election experience?

Robin Hunt, head of the Guardian New Media Lab

"Of course we had problems. For example, the constituency database search engine found no entries for Blair. But you have to learn not to freak out. On the positive side, we did find that once guided to chat forums, people use them to discuss in a very informed way. There was very little abuse."

Nigel Charters, editor of the BBC election site

"The election was the fourth event we'd put online, after two budgets and the Olympics. We decided that single events were a good way to learn about staging events online and it certainly taught us a lot about convergence and about providing news on demand. It also taught us a lot about taking disparate news inputs and putting them into easy to navigate pages."

Alastair Jeffs, producer of the GE97 site

"A lot of content and technology issues had to be confronted over the three to four month period. GE97 took Online Magic a few steps in

information. Other sites tended to post content at fixed points in the day. We were less about gimmicks and more about serious content."

Alastair "I was very pleased with the online debates, which used streamed live RealAudio. Paddy Ashdown was the highest ranking parliamentarian that participated in an online chat with users during the General Election and we hosted it. This made GE97 a hub of activity."

Q How would you do it differently next time?

Robin "I expect for the next election we'll be working with a broadcaster looking at a digital TV channel. We'll be able to talk directly with Tony Blair online and we'll get junk mail from political parties to put their manifesto messages across."

Nigel "We underestimated the server load so next time we'll beef our servers up a bit. The BBC uses the word 'fun' carefully, but we'll have more interactive fun elements. We also think there's room for having a specialist available for IRC discussions rather than using the post and reply forum system."

Alastair "I'd assemble a bigger team dedicated on a day-to-day basis to the site and I'd definitely avoid beta testing new technologies live."



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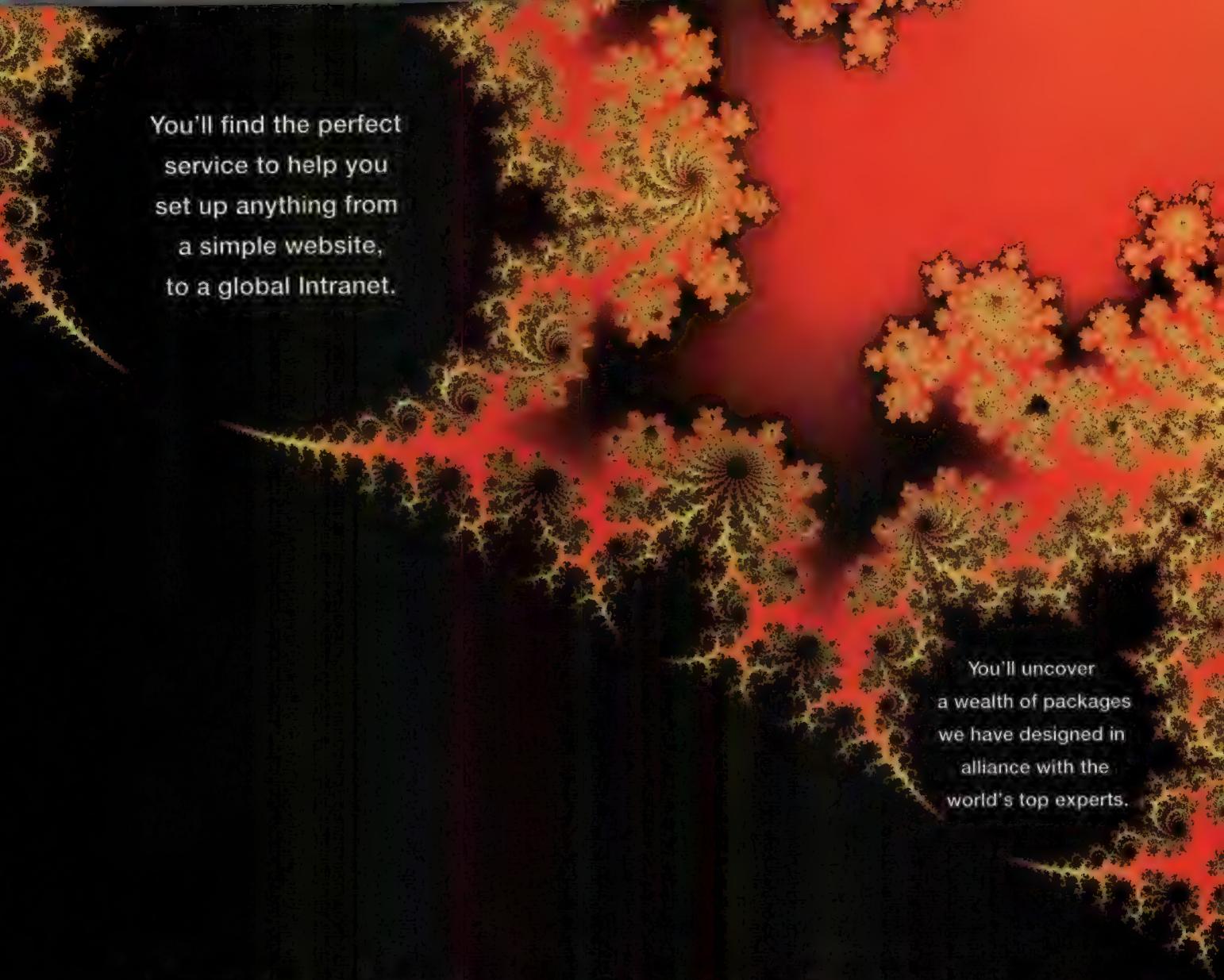
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BT has built one of the largest Intranets in Europe, with over 60,000 users. With this experience, we can help you build your own Intranet or provide a fully-managed service to your organisation with the minimum of hassle. And to help you get the best value and quality from your Intranet, BT has established close working relationships

with some of the world's top hardware and software suppliers - names like Digital and Microsoft. Naturally, we support the Domino server, so organisations using Lotus Notes can share data with partners, suppliers and customers securely via the Internet.

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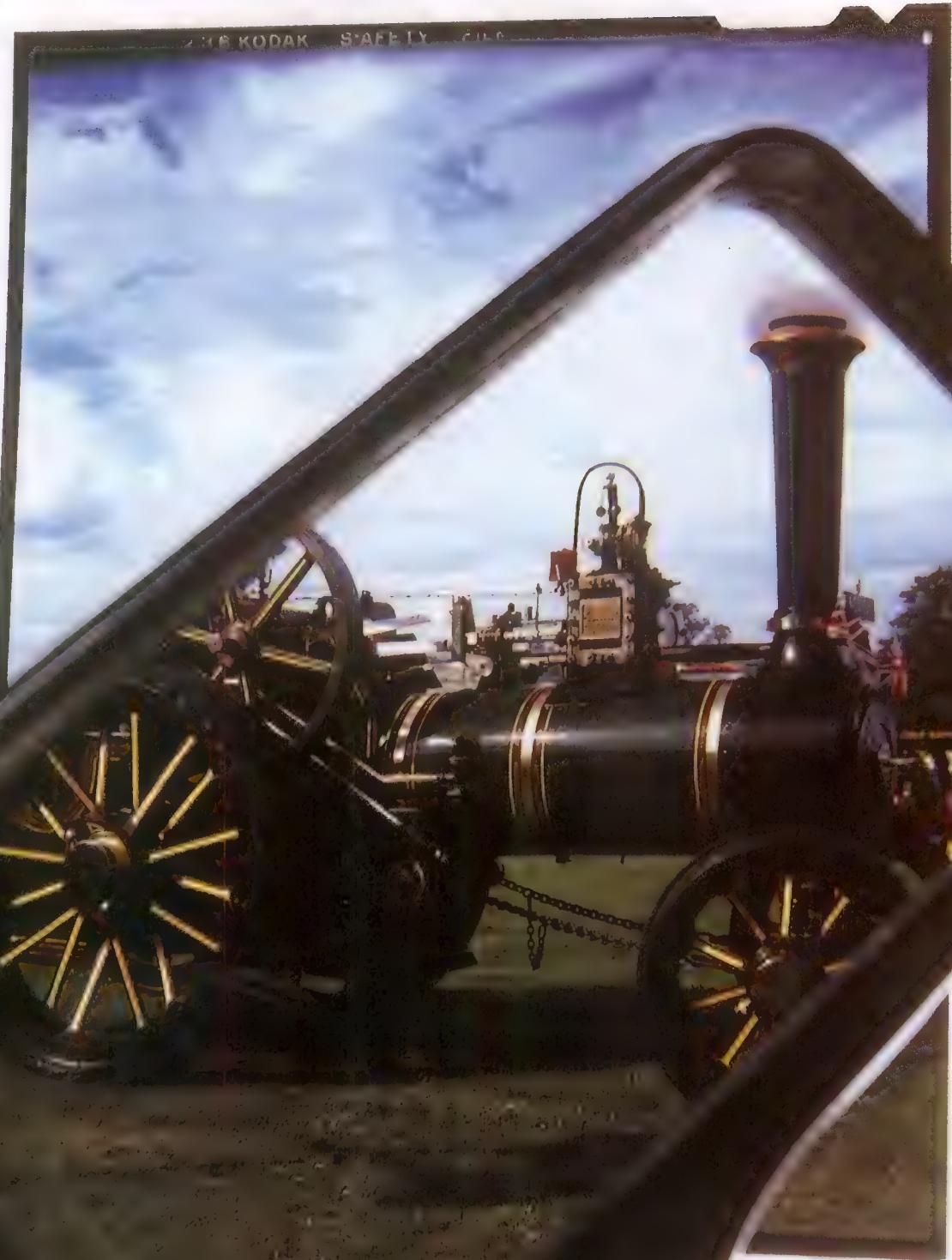
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How to get to the top of the list

Alta Vista, HotBot, Lycos, Web Crawler, Infoseek... The list of search engines is incredibly long but it's worth pursuing because you want to get your site to the top of every one of those search results. Danny Sullivan reveals how to work your way up those lists and explains how the search engines rank sites.

It happens to every Web designer, at some point. You spend weeks creating the world's greatest Web site. It has graphics, does neat things with Java script, and finally proves that frames do indeed have a purpose. Then the client calls. They can't find the site using their favourite search engine. Why isn't it showing up?

Chances are, you've neglected your search engine design. Page titles were added as an afterthought. Meta tags weren't added at all. You did nothing to help those who can't view frames. That doesn't mean your site won't draw traffic, but it certainly makes it harder for people to find it using search engines. And since search engines are one of the chief ways that people look for Web sites, it makes sense to make some small changes to your site to improve your position in search engine listings.

Step one is to know the difference between a search engine and a directory. The difference revolves around how listings are compiled. A search engine, such as Alta Vista, creates its listings automatically. It crawls the Web, then people search through what it's found.

A directory, such as Yahoo, depends on humans for its listings. You submit a description, or editors write one for reviewed sites. A search looks for matches only in the descriptions, so changing your pages has no effect on your listing.

For true search engines, page design is crucial. To help you get your site listed, this article explains how search engines find and rank your Web pages and gives you a few tips on how to improve your performance.

How search engines work

Everything starts with the spider. The spider, sometimes called the crawler, visits a Web page, reads it and then follows links to other pages within the site. The spider comes back every month or two, to look for changes. Everything the spider finds goes into the second part of a search engine, the index. The index is like a giant book containing a copy of every Web page the spider finds. If a Web page changes, then the index is updated.

Then every search engine has a program that sifts through the millions of pages recorded in the index to find matches to a search, and then ranks them in order of what it believes is most relevant.

Every search engine works differently. Below, we look at the differences between the major search engines.

Alta Vista

Alta Vista will add any Web page you submit to its listings within a day or two, and you should make use of this feature to add key pages from your Web site to the index quickly. Submit the five to ten most important pages, doing one page a day. You don't want to do them all at once, because Alta Vista considers this as an attempt to spam the search engine and may stop you from submitting any further pages.

About a month after your submissions, Alta Vista will visit your Web site and look for other pages too. It may not add every page, but it usually gathers a good sample.

Excite

Excite has an excellent crawler. Submit a page and, within three to four weeks, Excite will come and gather everything it finds. Be sure that the page has text links for Excite to follow, since it doesn't read image maps.

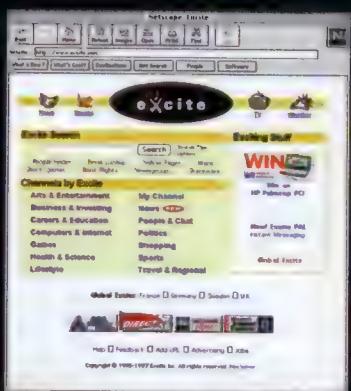
Excite is the only major search engine not to support meta tags. Because of this, it's crucial that you have text on your Web pages to stand any chance of success. What's more, Excite prefers Web pages that use full sentences.

Excite will follow your frame links. However, this also means folks can enter the site without the proper frame context being established. Solve this problem by making sure there are links back to the homepage on your frame pages.

HotBot

HotBot weighs pages with keywords in their meta tags higher than pages lacking the tags, so be sure to use them! But do bear in mind that keywords in the title remain the most important to HotBot.

HotBot will visit your Web site about three to four weeks after a page is submitted. Over time, it tries to learn how often your Web site changes, then visits only when necessary. Because of this, make sure you resubmit the site to HotBot every time you make any changes.



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Make sure you keep HotBot informed of any changes to your site

Infoseek

Infoseek is the only search engine that will index a Web page minutes after it's submitted, and it doesn't limit how many pages can be submitted this way. Play it safe, and submit them all. If you have less than 50, you can use the online form. For more than that, Infoseek asks that you send URLs in via email. Don't try to submit any page more than once in a 24 hour period. That's considered a spamming tactic.

Be sure to check that each page is added, using the form Infoseek provides after a submission. If Infoseek has problems processing the page, it will tell you how to fix these. Finally, use meta tags, because Infoseek ranks pages a bit higher if they have them.

Lycos

Lycos is the only search engine that indexes a condensed version of your Web page rather than the full text. That means content is crucial. If your page doesn't reflect your keywords, then Lycos probably won't include your keywords in the summary it creates.

Page popularity also plays a role with Lycos. It won't necessarily add every Web page from your site. But if a page has a lot of links to it, the odds improve for that page to be included. As with Excite, Lycos will index your frame pages. Also, be patient. Lycos may take up to eight weeks to crawl your site.

WebCrawler

WebCrawler is the smallest of the search engines, which means there's a good chance your Web page won't be included. Or perhaps a page or two of your site may get in, but WebCrawler

may not spider the rest of your site. Link popularity is important for WebCrawler, so help yourself by pursuing other forms of publicity. Also, be sure your pages have good content, because each page has to represent your entire site. Finally, consider that, by default, WebCrawler only lists page titles so include your keywords in your page title.

Ranking pages

Search for something like swimming pools and within seconds, a search engine will sort through its millions of listings and present Web pages that match the topic, ranked in order of relevance. But search engines can't rank Web pages by relying on judgement and past experience, in the way humans can. Instead, they need a set of rules to determine relevancy. The major search engines follow the location/frequency method.

Consider location first. If you went into a library to find a book on swimming pools, you'd think a book with swimming pools in the title should be relevant. In the same way, search engines usually favour Web pages that contain the

search keywords in the page title. Location doesn't stop there. Search engines also check to see if those keywords appear near the top of a Web page, such as in the headline or in the first few paragraphs of text. The logic is that a page relevant to the search will mention these words at the beginning.

Frequency is the other part of the equation. Search engines will tend to favour documents where the keywords appear in high frequency in relation to other words on the page or in relation to other pages they've indexed. The exact way this method is applied by each search engine varies. And those results can be influenced by other factors. For example, WebCrawler uses link popularity as part of its ranking method. It can tell which pages have a lot of links pointing at them and these are given a slight boost during the ranking process.

Many Web designers assume that adding meta tags will propel their pages to the top of a listing. Meta tags are hidden code on a Web page that only search engines read. Both HotBot and Infoseek do give a slight boost to pages with keywords in their meta tags but Excite doesn't read them at all.

Search engines will also penalise pages or exclude them from the index to protect relevance. This is done when they detect search engine spamming, such as using a word hundreds of times on a page.

How not to do it: Comic Relief

We went looking for a prominent site that illustrates poor search engine design and found Comic Relief, www.comicrelief.org.uk. We didn't find this site in the top 30 results when we searched for 'comic relief' in the major search engines. There were no Comic Relief pages at all listed in HotBot and Infoseek. Perhaps the site was never submitted to them, or perhaps there was a problem when the spiders came to visit. Either way, it shows the need to check your listings.

The Comic Relief homepage automatically forwards visitors to an inside page, and this spells trouble for spiders. Most see the world as if they were old browsers, so you can't rely on them to understand the latest tricks, or even old tricks such as image maps. A text hyperlink at the bottom of the page ensures that spiders can get inside.

The homepage has another problem: no text, just a big image. The title says Comic Relief, but that's not enough to get to the top of the listings. The page needs some content to reinforce the title. A meta tag here would help.

The inside pages are loaded with keyword-rich content, but they're hindered because of the use of

frames, which some of the search engines can't follow. For example, Alta Vista lists seven pages from the Web site. But since it can't follow frames, and since there were no meta tags, all it read was the noframes information for three of the pages.

Search engines that do read frame pages, such as Excite, aren't going to rank those pages highly because they lack titles. Frame pages don't technically need titles. But you can give them titles without causing browser troubles, and this helps them do much better with search engines.

Another boo-boo is that titles don't change from page to page. This wastes an opportunity to tune pages to different keyword phrases.

Obviously, many people found the Comic Relief site, but had a few simple things been done, it would have got more traffic via the search engines.



Getting up the list

Everyone wants to get to the top of search engine lists. Here's how to do it:

1 Pick your strategic keywords The words you imagine users typing into the search box are your strategic keywords. Say you have a page devoted to British stamps. Well, 'stamp collecting in Britain' are probably your strategic keywords. Each page in your Web site may have different strategic keywords that reflect the page's content. Your strategic keywords should always be a phrase of at least two, preferably three words long.

2 Position your keywords Now you have your strategic keywords for each page, make sure they appear in the crucial locations. Put them in your page title, use them for your page headline, include them in your meta tags and make sure they appear in the first paragraphs of your page.

3 Reinforce with content Make sure your page is related to your strategic keywords. For example, our stamp collecting page might have copy that refers to 'collectors' and 'collecting'. A smart move would be to enlarge each reference to 'British stamp collectors' and 'British stamp collecting'. That will help the page for those keywords. Don't go crazy enlarging everything on your page, but do use full phrases where appropriate.

4 Add meta tags Most of the major search engines support two types of meta tags. The keywords tag lets you assign keywords to your pages – helpful if there are words you don't mention in your text but are relevant to your topic. The description tag specifies the summary to be listed for your site. Both go inside the head area of your Web page. For example:

```
<HEAD>
<TITLE>The Wonderful World of Stamp Collecting</TITLE>
<META name="keywords" content="stamp collecting, stamp history, penny black, stamps">
<META name="description" content="Everything you wanted to know about stamps, from prices to history.">
</HEAD>
```

The search engine will associate those keywords with your Web page. Your site will be listed as both The Wonderful World of Stamp Collecting and Everything you wanted to know

about stamps, from prices to history. For the keywords tag, list your keywords as shown, with commas between the words. Length varies by engine, but keep it to under 1,000 characters between quotes. The length of description tag also varies by search engine, but keep it to 25 characters, too.

5 Search engine design Some search engines may not read image maps and they may not read frames. If you don't compensate for these things, they might not index any or all of your Web pages. The image map problem is easily solved. Use text links as an alternative, or create a site map with text links to everything on the site.

As for frames, put something useful in the noframes area, since this is all some of the search engines will see. For more details, see the Coping With Frames tutorial at:

<http://calafia.com/webmasters/frames.htm>

6 Submit your site Submit two or three key pages from your site to prompt the search engines to visit. Usually, this is the homepage, and any good page with links to everything in the site, such as a site map. Don't bother submitting more than this, except with Alta Vista and Infoseek.

Don't trust the submission process to automated programs and services. Some of them are excellent, but the major search engines are too important. Submit manually, so you can see if there are any problems.

7 Be spam free Don't spam the search engines. Firstly, it doesn't always work. Secondly, search engines may detect your spamming and ban your page.

8 British editions A number of sites have UK-specific versions which only list sites that have British domains, such as .co.uk. If you have a UK with a non-British address, such as .com, you may need to message the search engine to keep it from being filtered out of any UK directories.

9 Network Do what you can to improve your position, but also get in contact with other sites and negotiate reciprocal links.

10 Relax You can spend days trying to improve your position, time that could be better spent on other publicity.

Check your listing

Search engines spiders leave a record of their visits in your Web site logs. There are two ways of spotting them, by agent name or by host name. Searching by agent names is usually best, because spiders may report different host names on different visits. However, some people don't have access to agent information or don't have a log analysis program that can search by agent names. In these cases, a host name search can be useful. You also need to know what to look for.

- The first file to look for is robots.txt. This file tells spiders not to index portions of a Web site and sits in the root directory of a Web server. Anything requesting this file is almost certainly a search engine spider or an agent program. By reviewing the requests, you can usually spot spiders from the major search engines by their host names, which in turn tells you the latest agent names.
- Now you can search for all requests filtered by either the agent or host information for a particular search engine. You'll see exactly what they've requested during the time period you analyse. Below is the current information for each of the major search engines:

Alta Vista The agent name is Scooter. The host name is scooter.pa-x.dec.com, except for pages that are added via the submission form. Then the host name is a variation of www*.altavista.digital.com, such as www2.altavista.digital.com.

Excite The agent name is ArchitextSpider. The host name is a variation of crawl*.atext.com, such as crawl2.atext.com.

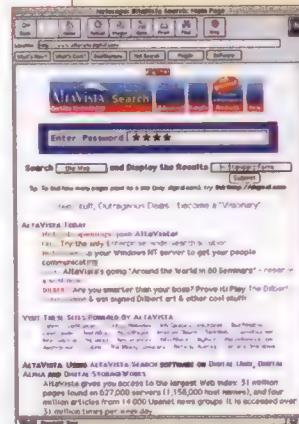
HotBot The agent name is Slurp, but HotBot licenses its crawler to other people, so agents of this name from inktomi.com represent HotBot. The host name will be a variation of *.inktomi.com, starting with a letter/number combination, such as j10.inktomi.com.

Infoseek The agent name is InfoSeek Sidewinder. The host names will be a variation of *.bbn.infoseek.com, such as galore-bbn.infoseek.com.

Lycos The agent name is Lycos_Spider_(T-Rex). The host name can be lycosidae.lycos.com or a variation of spider*.srv.pgh.lycos.com,

WebCrawler The agent name is WebCrawler/3.0 Robot. The host name is a variation of *.webcrawler.com

AltaVista's main search page



Checking your listing

Here's how to make sure your Web pages actually make it into the search engines.

- With Alta Vista, you type in the address of your page, preceded by url: but without http://. For example, url:mysite.com/mywebpage.htm.
- Infoseek works in a similar way. Type in url:mysite.com/mywebpage.htm for a particular page or url:mysite.com for pages from your site.
- With HotBot, you open the Location tab, enter your domain in the CyberPlace area and then push search. HotBot will come back with a match for all the pages from that domain that it knows of. If you don't host your own Web site, put the domain in the box instead, then search for the URL.
- Lycos and WebCrawler have pages to let you check on your site, but they don't show the actual listing, they only confirm that your page has been visited. The best strategy is to enter your address in the search box surrounded by quotes, such as "http://mysite.com/mywebpage.htm."

Danny Sullivan is a freelance writer and Internet consultant who maintains A Webmaster's Guide To Search Engines, a Web site devoted to search engine news.

<http://calafia.com/webmasters/>



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- b Go surfing
- c Visit your local Link store

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Internet Magazine is committed to bringing you the best and most authoritative reviews in the Internet industry. Every month we'll test and rate the most important new Internet products and Web sites. If you're making a buying decision, looking for a Web design company or doing a bit of pre-purchase research, the following pages are crucial.

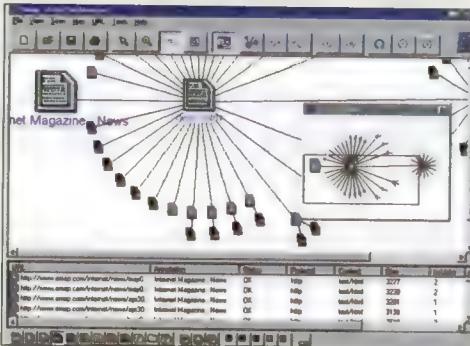
In Tried & Tested you'll find the latest news on just-announced products, hard-hitting reviews of key product releases, comprehensive Labs tests and details of all the freeware and shareware you should be downloading this month.

To find out how this month's most important Web sites were put together, turn to our Sites Surveyor section. Professional Web site builders spill the beans on how they plan, design and maintain their masterpieces.



July 97

Our experts test the key new releases

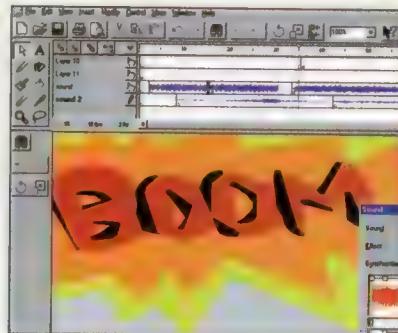


CyberStudio proves to be the best HTML editor for the Mac yet, and is the reason why every Internet user needs a copy of QuickView Plus, the ultimate file viewer. Macromedia sorts out Flash with the addition of sound and Micrografx launches a budget-priced Web creation suite

Pages 74 to 86

Find out how the latest site management tools can take the stress out of running a site. Astra's SiteManager and Adobe's SiteMill share the winner's laurels

Pages 66 to 72



If you want to keep track of your Internet traffic, check out Net.Medic and Geoboy in this month's Hot Downloads

Page 90

The online TV scheduler, Time Machine, gets our Site of the Month award. Its intuitive, Java-based interface and its ability to tell you how much of your favourite TV program you've missed set it apart from the crowd **Page 98**



The Radio1 site hits a few problems in its redesign, while the RAC, Lee Jeans and Gap Kids all ply their wares online

Pages 101 to 111

We investigate how Progressive Networks' RealAudio and RealVideo technologies are being used successfully on the Web **Page 113**

Star Ratings

★★★★★	Must buy
★★★★★	Should buy
★★★★★	Could buy
★★★★★	Poor buy
★★★★★	Don't buy

site

management tools

Can site management programs really make running a Web site easier? The Internet Magazine Labs team finds out as it investigates seven of the top programs on the market.

Whether you run a small site with just a couple of pages or a huge Web presence with thousands of pages and more images than you can shake a stick at, it's important that you know what's happening on your site. The webmaster needs to have a good grasp of where pages are, and should be able quickly to spot and fix any problems, no matter how big the site.

Understandably, as sites grow, managing the site gets trickier. No webmaster can be expected to check thousands of pages by hand,

yet a simple corrupt graphic or dodgy link will give your site a shoddy, unprofessional image.

This is where the site management packages in our round-up come in. They allow you to examine your site, and look not just at the pages but also at the links between pages, graphics, Java applets and whatever else you use. These programs make it much easier to spot any problems (such as bad links or missing graphics) and generally make sure you know what's happening on your site.

Many also offer more sophisticated tools, such as external link checking, the uploading of pages as they're created or changed, and the automatic mapping of changes on a site.

Getting ahead

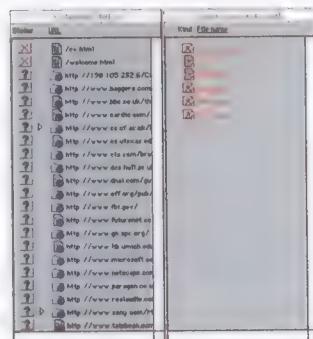
It's true, none of the programs do anything you couldn't do by hand. Instead, they take the processes any webmaster worth his salt would need to go through, and make them quicker and easier. If you're a professional webmaster, this could

save you time and money. If you run a site in your spare time, it could give you more time to get on with the important business of creating pages, instead of tracking down and solving minor problems.

Problem solving

If a problem crops up, the webmaster has to get in there and fix it quickly. Although none of the programs allow you to edit pages directly, they're designed to work with an HTML editor, which can then be used to fix problems like bad links or missing files. All of the programs let you pass pages quickly and easily to an HTML editor, and some can even automatically copy edited pages onto the Web server - much faster and easier than uploading them one by one.

Some of the programs (in particular Adobe SiteMill) can also carry out search-and-replace operations on an entire site, which is a remarkably powerful feature to



How the site managers manage

	SiteMill 2.0	WEB.SiteManager	SiteCommand 1.0	SiteManager WebAnalyzer 2.0
Price	£150	\$299 (£190)	Free	\$249.99 (£155)
Platform(s)	Mac	NT, Win 95	NT, Win 95	NT, Win 95
Visual map	○	●	○	●
Printed map	●	○	●	●
Errors only	●	●	●	●
HTML report	○	○	●	●
Changes	○	○	○	●
Scheduled updates	●	●	○	○
Orphan checking	○	●	○	○
External links	●	●	○	○
Java applets	●	●	○	●
Multimedia Content	●	●	○	●
Analysis from local disk	●	●	○	○
Basic HTML editing	●	●	○	○
HTML checking	○	○	○	○
Search & replace	●	●	○	○
Creates local copy of site	●	○	●	○



SITE TOOLS

have at your disposal. If a section of the site is moved, you can do a search-and-replace on every link to that section, updating every link to the new location in one go. This is a seriously useful tool if you're working on a big, complex site.

Making life easier

A decent site management program can make the webmaster's job easier, and can also spot problems before users find them. Most of the programs let you check out a site

graphically, which is a good way to get a bird's eye view of the site. The programs can also help to spot problems normally beyond the webmaster's control, as many check the site's external links. So although the webmaster can't control whether these work or not, it does mean you can remove links to sites that are down.

It's also worth noting that some site management capabilities are also being built into HTML editing programs, the dividing line

between a HTML editor and a site management program is becoming blurred. SoftQuad now bundles a basic site management program called HoTMetal Information Manager with HoTMetal Pro 3. Microsoft's FrontPage has a

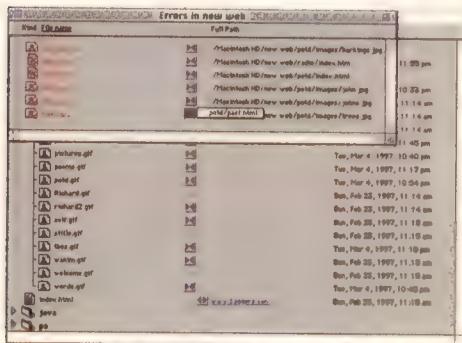
clutch of powerful site management utilities, including the ability to link directly to the Web server program to upload new or changed pages. Although these are not as powerful as many of the programs covered in this round up, they may be just fine for some users. We recommend you download a demo of these programs before investing in a specialised site management program.

Which product to pick

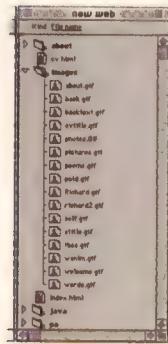
This round-up includes a wide range of programs aimed at a variety of users, which makes it tricky to pick an overall winner.

However, a couple of programs stand out from the crowd. For a general overview of a site and from a webmaster's point of view, Astra's SiteManager is an impressive program. You can configure it thoroughly, and the Action Tracker gives you an interesting way to look at how visitors use your site, by telling you how they move between the pages.

If you want more of an HTML editing-based approach, SiteMill is the outstanding choice. Although it appears to be a simple program, it has a hell of a lot of power hidden beneath that interface. Its only drawback is it's limited to the Mac operating system.



SiteMill is an excellent program for managing sites big and small



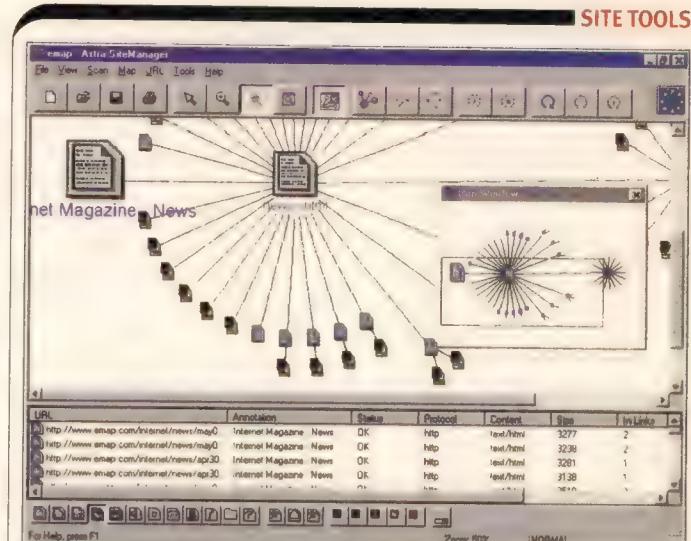
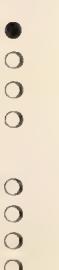
1.03 Linkbot 3.0 MerzScope 1.0

Free (beta)

\$199.95 (£125)

Unix, NT, Win 95

Win 95, NT



SiteManager offers graphical and list-based site mapping

Astra SiteManager

For a general overview of a large site, this program is worth investigating

Astra SiteManager takes the visual approach. As it scans a new site, it creates a spiders-web map of the site that shows the various pages and the links between them, spreading out from the home page. The types of content (such as straight HTML pages, Java applets, images and so on) are shown by different icons.

With a large site, this map quickly becomes too big to show individual pages, but you can zoom in down to the level of a page, and a pan window gives an overall view and lets you quickly move to different areas. Click on any individual page or item and it opens in the default browser window.

You can filter the visual map of the site in one of several ways. A toolbar on the screen allows you to exclude (or show only) numerous types of content, including audio, Java applets and images. You can also set this to show only errors such as missing links or images.

Once you've created and saved a map, you can highlight changes to the site when you rescan it. This process is automatic – you simply kick off an automatic scan and the program produces a map of changes. There's no easy way to schedule scans although you can scan external links.

SiteManager also has an Action Tracker, which effectively maps the log file of the site onto the site map,

showing the number of visitors who've used the links from page to page.

This gives much more information than a simple log file analysis program (such as the ones reviewed in the round up in *Internet Magazine*, issue 30, page 72). Though it doesn't track individual users, it does give you a useful overview of the way a site is used, as it shows you where users go when they're browsing.

Any pages with errors can be passed onto a HTML editor, although SiteManager doesn't automatically upload them once the errors or changes have been made. You have to do this manually and then rescan the site to test the new pages and links.

Verdict

SiteManager is an easy program to use, and it gives you an excellent way to take an overview of a site. It misses many of the powerful editing tools of programs such as SiteMill, but it's a simple, flexible way to get a global view of a big site.



Astra SiteManager 1.03

Price \$495

Pros Gives an excellent visual overview of a site

Cons Lacks the heavyweight editing tools of some of the other programs we tested

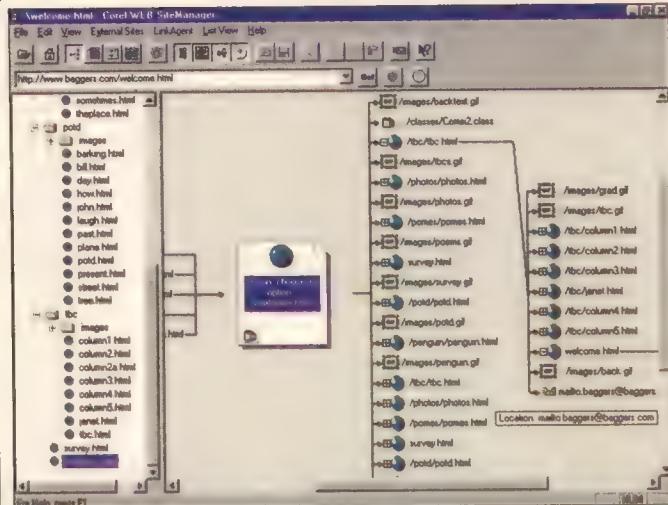
Download size 3.82 Mb

Platforms Windows 95/NT

Contact Mercury

URL www.merc-int.com/products/astrasmguide.html

SITE TOOLS



It may be confusing to begin with, but once you get the hang of it this is a pretty powerful program

WEB.SiteManager

Part of Corel's WebMaster Suite, it's a powerful program in its own right

The curiously named WEB.SiteManager is a component of Corel's WebMaster Suite, which also includes an HTML authoring program and a database system. This selection should give you everything the aspiring webmaster is ever likely to need in one package.

Like several of the other programs reviewed here, WEB.SiteManager takes a visual approach, although it has a more conventional directory-based approach next to the visual map. If you leave the mouse over an item you get the basic information on the page: title; location; and use of Java, ActiveX, and so on.

The program never shows the entire site. Instead, it first shows a single page and the links leading off from this. You can open this diagram out to several levels. At any one level, it shows only the links coming off one page. A variety of filters let you limit your view to pages with errors, or with external links (which the program can automatically check), or pages using Java, CGI forms, ActiveX and so on.

You can start automatic updates of the map using the Link Agent, which you can set to rescan the site at a preset time using the Windows 95 or NT Service Agent. WEB.SiteManager can publish changed pages straight to the Web site, but only if you're using a

MicroCraft PageDepot server. And the program has a built-in basic FTP client, which you can use to transfer fixed pages onto a site.

The program also has global search-and-replace tools, which can search for a word or phrase (or HTML element) and replace it throughout the site.

The display of pages can initially be confusing, with a link to the same page often appearing several times. For example, if you select a page linked into an index page of some kind, the map would show an incoming link from this index page, with another outgoing link back to the same page. A sub-page off the currently selected one might also have a link back to the index page, making three appearances for the same page.

But this is something you get used to pretty quickly, and the display of both incoming and outgoing links is actually a nice touch. It gives you a clearer view of the total number of links into and out of a page, so you get a better overall perspective.

★★★

Corel WEB.Site Manager

Price \$299 for Corel WebMaster Suite (£190)

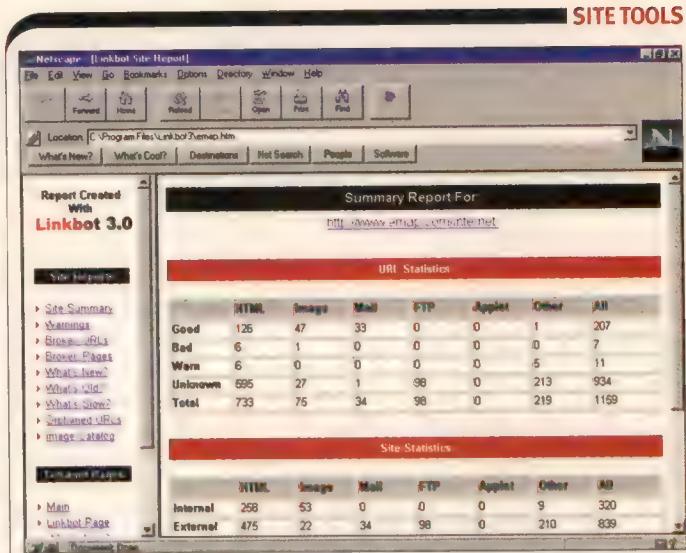
Pros Plenty of information well presented and with powerful filters
Cons Doesn't show the entire site at once; interface can be rather confusing to begin with

Download size 3.12Mb

Platforms Windows 95, NT

Contact Corel

URL www.corel.com/corelweb/webmaster/index.htm



Though you may have to export pages to fix them, this program makes problems easy to spot

Linkbot 3.0

A powerful analysis and management program with a familiar look to it

Linkbot's user interface is modelled on a Web browser, right down to the animated icon in the top right corner. The items on the site look a lot like items in Windows 95's Explorer. Clicking on the plus sign next to a page or item opens up a list of links from that page. You can also choose from a number of different views – child links, parent links, HTML or properties – of the pages on the site being analysed.

When examining a site from a local disk, the HTML view lets you do some basic editing of pages, but you can't do WYSIWYG editing here. You can, however, pass pages to an external HTML editor. The preferences view gives you the details of the selected page or item, including the size of the page and the parent links to the item.

Linkbot has a number of filters, including ones for Java applets, FTP and mailto links. It will also filter pages to show internal or external links only, or those which need a password. And Linkbot can flag pages if they're likely to take over a certain time to download, which it calculates using file size and connection speed (both of which you can alter).

When you're using such powerful tools, you have to be careful. When we set the program to scan for orphaned files – files on a Web site not linked to anything – without telling it the limits of the site, it

scanned our hard disk and assumed every file to be an orphan. This isn't a bug – we just didn't set it up properly.

Once Linkbot has analysed the site, it produces an HTML report that includes sections on broken links, pages that are likely to be slow to download and any orphans on the site. It also includes a catalogue of all the images on the site, with thumbnails of the graphics.

Linkbot doesn't handle scheduled updates directly, but you can set up four analysis sets and kick these off from an external scheduling program. If the machine running Linkbot has access to the Web server through file sharing, you could use this to publish HTML reports straight to the Web site.

Verdict

Linkbot is a powerful site management tool well worth evaluating. Its reporting facilities and filtering makes it easy to spot problems, though you may have to export the pages to an external editor to fix them. Be sure to set the parameters correctly.

★★★★

Linkbot 3.0

Price \$199.95 (£125)

Pros Familiar interface; good reporting

Cons Not for the beginner; no WYSIWYG HTML editing

Download size 2.16Mb

Platforms Windows 95, NT

Contact Tetrinet Software

URL www.tetrinetsoftware.com/linkbot-info.htm

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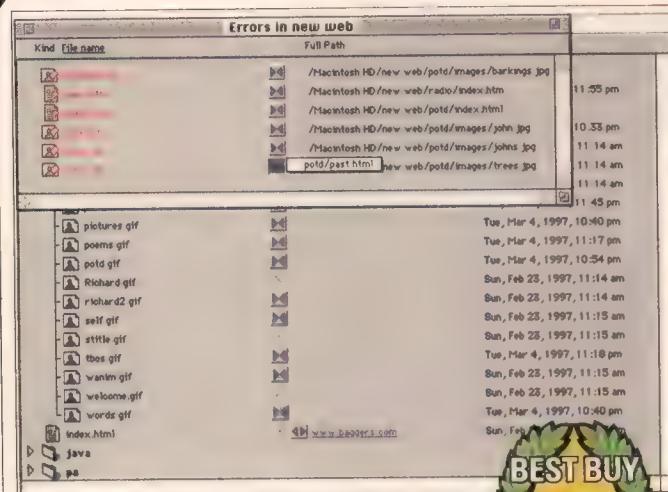
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SITE TOOLS



SiteMill looks simple but is actually a sophisticated site manager that dovetails beautifully with Adobe PageMill, an HTML editor



SiteMill 2.0

SiteMill works well with Adobe's HTML editor, PageMill, and has an easy-to-use FTP uploader

This is the second version of Adobe's site management program, and it includes a slew of new bits. The program's approach is different to other visual packages. You don't get a graphical view of the site. Instead, when a new site is scanned, it gives you a list of errors and a directory-based view of the site.

PageMill and SiteMill are tightly integrated. If you spot an error using SiteMill, you can open the page in PageMill, and fix and upload it straight onto the site from within SiteMill. You can also use other HTML editors, although naturally they don't integrate as closely.

SiteMill now has an FTP uploader, which you can use to upload a site (or changes to a site) direct from SiteMill. This system doesn't need any special extensions to run on the server. It acts like a standard FTP client. You can upload the whole site, or just those files that have changed since the last upload. SiteMill can also synchronise the live Web site and the local disk copy used to build the site.

This last feature alone could justify the cost of the package. As any webmaster will tell you, synchronising the live and test copies of a site can be a tiresome business, and automating this process could save a significant amount of time.

Adobe has also improved SiteMill's support for frames. The program now treats frames as separate Web pages, which makes the process of managing a framed site much easier. It will also check links to external Web sites automatically.

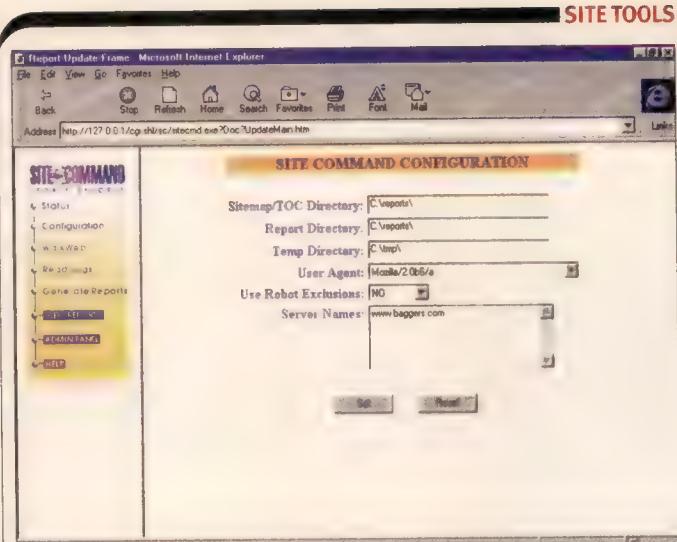
Verdict

SiteMill looks disarmingly simple. With only four menus and a rather basic interface, you wonder where all the power is. But it quickly becomes apparent that this is a professional tool. All of the facilities a webmaster is likely to need to manage a site are here, including some powerful search-and-replace tools that you can use to change a link or a piece of text throughout an entire site. Moving a part of a site from one location to another becomes simplicity itself – just do a search-and-replace for the HTML pointing to the link throughout the entire site and then ask SiteMill automatically to upload all the pages that have been changed.

NOTE: We reviewed a late beta of SiteMill 2, as the final version wasn't finished. The free beta will stop working in June, when the final version is scheduled for release.

Adobe SiteMill 2.0

Price 'Sneak-a-peek' free beta
Pros Powerful features, easy to use, integrated with HTML editor
Cons Awkward handling of frames
Download size 1.4Mb for Power PC, 1.2Mb for 68K
Platform Mac
Contact Adobe Systems
URL www.adobe.co.uk/products/smillnew.html



You'd be better off waiting for the Pro version of this program, which will be much more powerful, and more attractive

SiteCommand 1.0

This program promises much but lacks graphical mapping and HTML editing

SiteCommand differs from most of the other programs in this roundup. Instead of running on a user's machine and accessing the Web site remotely, SiteCommand runs on the server itself and is accessed through a Web browser.

This means the user needs access to the server to run it, which means SiteCommand isn't really suitable if your Web site is run by an ISP or on a machine that's shared with other sites. It's unlikely that the people responsible for running the machine would allow you to run your own programs on it, for security reasons.

If you do run your own server, or have ready access to the machine serving your site, then you just unpack the zip file onto the server's hard disk to install SiteCommand. Versions are available for Microsoft's Internet Information Server (IIS) and Netscape's FastTrack server. Sadly, the instructions aren't particularly clear about exactly where it has to go. If you don't get this right, the program won't run properly. The server also has to be configured to allow programs of this type to run, which many won't allow for security reasons.

Once it's up and running, SiteCommand can map your site and carry out a series of analytical tasks. These include finding broken links, producing a list of the most popular pages (based on log-file

data) and a hierarchical map of the site. These reports are adequate, but fairly basic. For example, the site map report is just a hierarchical list of the Web pages that form the site. Clicking on any of them opens the page in the browser window. The whole process of producing and viewing these reports is done through a Web browser, so it could easily be done remotely.

Verdict

SiteCommand is nowhere near as powerful as the other tools in this roundup. It lacks the graphical mapping of Astra SiteManager and the HTML editing tools of SiteMill. It also lacks the visualisation tools of WEB.Site Manager or WebAnalyzer. To be fair, the product is free, but in truth it's a very simple Web site analysis program without any of the more useful management tools.

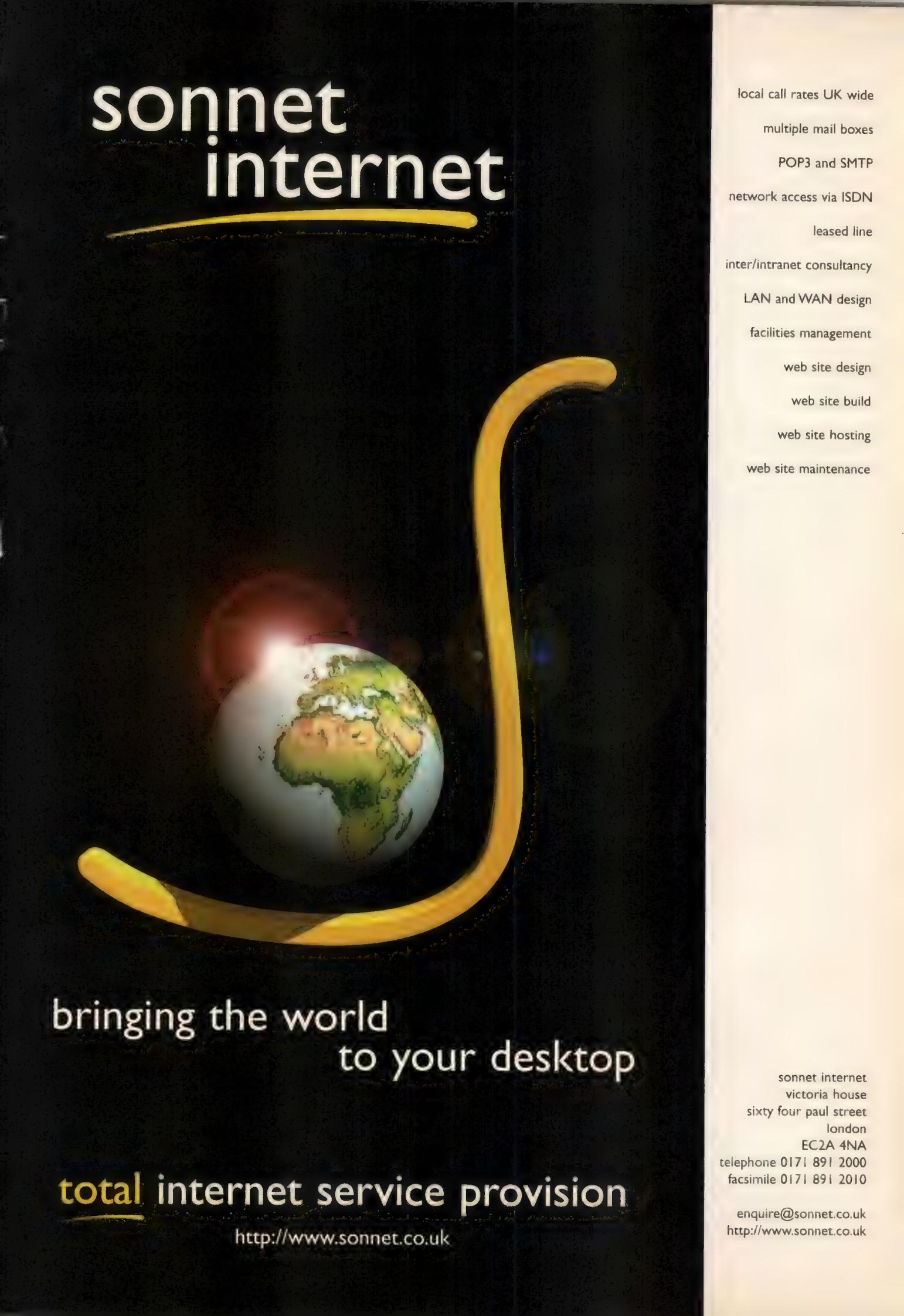
A professional version of SiteCommand is currently being beta tested, which should include greatly improved log-file analysis tools and several new reports for analysing Web sites.



InContext SiteCommand Kernel

1.0
Price Free
Pros Doesn't need a lot of resources; accessed through a browser
Cons Lacks the features of other products on test
Download size 0.7Mb
Platform Windows NT
Contact InContext
URL www.incontext.ca/products/index.html

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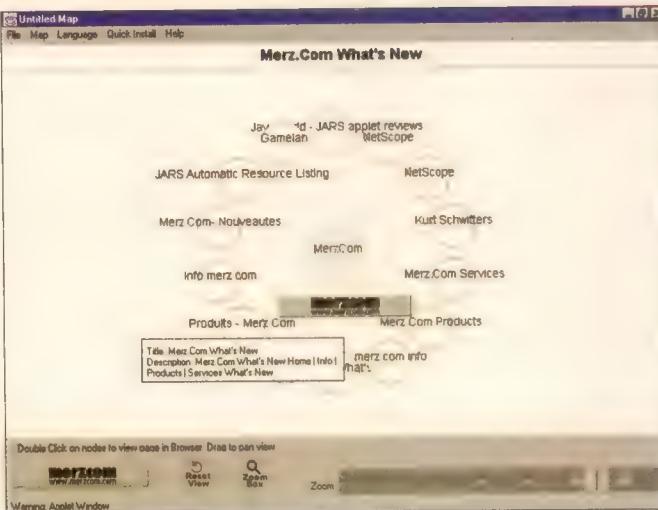
EC2A 4NA

telephone 0171 891 2000

facsimile 0171 891 2010

enquire@sonnet.co.uk

<http://www.sonnet.co.uk>



This beta version is still fairly primitive, but with a little more development it should let webmasters help visitors navigate their sites

MerzScope 1.0

An intriguing new Java site mapper which needs just a little bit more development time

MerzScope is a site management program with a difference (the version reviewed here is the first public beta). Instead of generating maps and information for the benefit of the webmaster, it's designed to generate maps to be used by visitors to the site. Any visitor with a browser that supports Java can use the maps to navigate their way around the site. The webmaster generates a map (which can be annotated with text and images) and puts an applet on the site which opens the map and displays it to the user, who can then jump to pages simply by clicking on the page icon, without having to go through the intervening links.

MerzScope has two parts, the map generator and the applet which displays the maps on the user's screen. Both are written in Java, which (in theory) means it can be run on any computer supporting Java. In fact the map generator needs the Java Development Kit (JDK) to run (although the applet runs on any machine), so there are different versions (which include the JDK) for UNIX and Windows systems. A Mac version is also in development.

The webmaster can choose which pages to include and you don't have to include every page. The scanning process works on a

page-by-page basis. As new pages are put onto the map, the program scans for links from that page and the webmaster decides whether or not these are to be included in the map. Pages and links can be moved as needed, and the map can be annotated with text and graphics.

The map then appears in a new window on the user's screen. The user can scroll around the map, zoom in or out and move to a page in the browser window by double-clicking on it.

At the moment, the system is primitive. All the elements are here, but it's rather slow, partly because the Java code hasn't been optimised (and won't be until they get close to a final version) and many features simply aren't implemented (such as the map validator) in the current version.

Verdict

This is a novel approach which could create a new way for webmasters to help visitors navigate a site. But it needs a lot of work before it becomes a realistic option.

★★

MerzScope Beta 1.0

Price Free (beta test version)

Pros An interesting way to create a site map for users

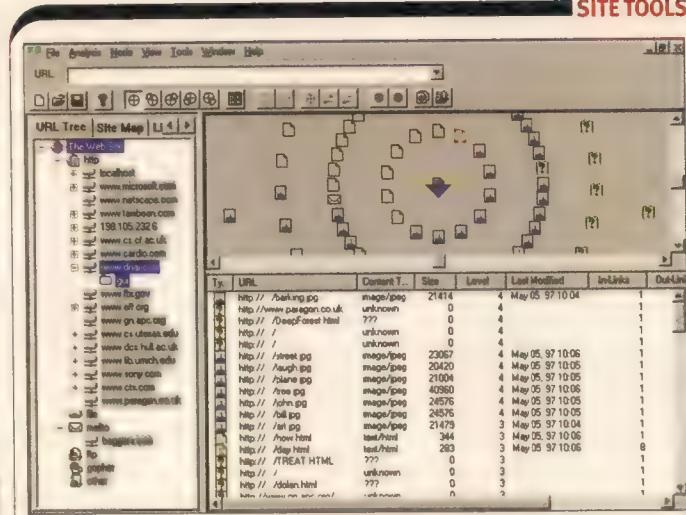
Cons Slow and clumsy at the moment

Download size 4.12Mb

Platforms Java (UNIX, Windows 95/NT, Mac on the way)

Contact Merzcom

URL www.merzcom.com/eng/merzscope/about.html



This package takes a largely visual approach to managing a site, but it's not awfully configurable

WebAnalyzer 2.0

A powerful program let down by a rather confusing interface

WebAnalyzer – from InContext Software, which also produces SiteCommand (see page 72) – takes a largely visual approach to managing a site, with a graphical map of the site showing the various pages and other content that makes up the site. It presents this information in a series of concentric circles, with the main page at the centre.

WebAnalyzer doesn't initially display the links between pages. Instead, two buttons on the toolbar allow you to display incoming and outgoing links on a selected page, thus making a large site much more readable. You can also display links in the link view, which gives a root-structure view of the links to and from a selected page.

WebAnalyzer shows a site's content using a variety of icons which indicate the type of content or the type of problem. As with the other programs reviewed here, this one has a number of ways of filtering the items shown (such as only showing errors, or images, or audio files bigger than 10Kb). You can set up user-defined filters, although the program allows you no more than four filters at any one time. If you need more than that, you'll have to edit them as you need them.

The program has few real editing tools. You can pass pages onto an HTML editor or open them in a browser simply by double-clicking on them, but that's about it.

WebAnalyzer has no global search-and-replace, and no automatic

uploading. It does have a 'make local site' option, which will create a complete working copy of the analysed site on a local disk. This could be useful if things have got out of control while you've been authoring pages and you want only to have those files actually used on the site. Updates on the analysis of the site (or sites) can also be run on an automatic schedule, and the program will produce an HTML report containing the details of the site and a list of errors.

Verdict

WebAnalyzer presents you with a number of different views of the site, but you don't have to use all of them. You can concentrate on just the one or two you need. The map of the site is rather more confusing than the one presented in Astra SiteManager, and doesn't give you as good an overview of the site. WebAnalyzer does give you more information (such as the map of links into and out of an individual page), so it's a question of deciding which level of information would be more useful to you.

★★★

WebAnalyzer 2.0

Price £159 (ex VAT); \$249.99 (available for purchase online – version 1.1 available as a free trial)

Pros Plenty of information about the analysed site

Cons Not particularly configurable

Download size 4.12Mb

Platforms Windows 95, NT

Contact InContext software

URL www.incontext.ca/products/wazindex.html

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IBM Visual Age for Java for Windows

IBM nails its colours to the Java mast with an applet builder to rival Visual J++

Everyone's gone Java mad of late. Latest to enter the fray is IBM, with the launch of the public beta test program for Visual Age (VA). IBM has also committed to Java as an open standards development platform.

We're usually wary of reviewing beta software as a lot of it is flaky. However, VA is remarkably complete and bug free – we reckon it can be used safely in the short term. IBM has said the feature set won't change, so aside from tidying up, optimising performance and fixing any holes that appear as a result of the beta programme, the downloadable code shouldn't change too much.

IBM claims VA is the first Java development product to be team-enabled and enterprise aware. It's designed to connect Java clients to existing server data and applications so that developers can

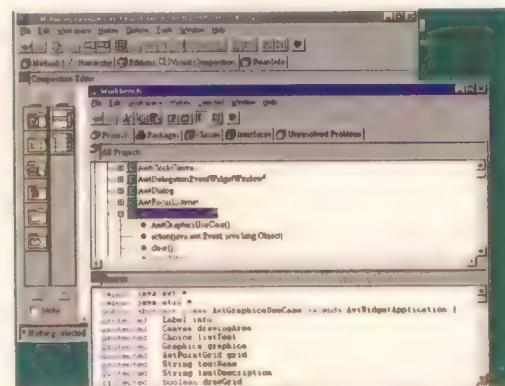
build server-based applications to communicate with Java clients for either intranet or Internet usage. Objects created using VA are 100 per cent Java, as Java Beans or applets, so developers will be saved the problem of re-writing applications for different platforms.

When launched, VA gives you four basic options: create a new applet; continue with existing applications; create a new class/interface; or go straight to the VA workbench. Code is presented in a class/method view similar to that in Symantec Café. Applets can be

constructed visually and while the range of available graphical objects isn't as extensive as those offered by other vendors, there's enough to build complex applications.

VA gives team-based developers strong version control, yet allows them to incrementally step back and look at previous versions of code. In a fast-moving world, where getting applications out quickly requires joint effort, this attention to detail is crucial, and will prevent group workers from getting lost in the development cycle.

VA for Java provides a neat class/interface view of code



As part of the bundle, you also get Enterprise Access Builder to generate Java Beans that provide fast connections to server-based applications. However, the beta code is flaky and there's a warning that, in its current state, it might not work with other Java virtual machines.

Overall, VA is competent, offers great connectivity but needs some performance tweaks and somewhat perversely for a product to be used for thin client applications, needs to be capable of running in less than the recommended 64Mb of RAM.

★★★

Dennis Howlett

IBM Visual Age for Java for Windows

Price TBA; beta is free
Pros Takes Java development into the enterprise, strong workgroup features, elegant interface
Cons Resource hungry, Enterprise Builder needs a lot of ironing out
Platforms Win95, NT4.0, OS/2 Warp4.0
Contact IBM
Phone (090) 426 426
URL www.ibm.com
Download www.software.ibm.com/ad/vajava

HTML EDITOR

CyberStudio 1.0

An HTML editor for the Mac that rewrites the site creation rule book

Despite large numbers of Web creatives using the Mac, the tools available haven't always made the best use of the Mac operating system (OS) or of HTML. Adobe PageMill, Claris HomePage, NetObject's Fusion and Microsoft's FrontPage have all proved themselves to be handy, if somewhat flawed tools.

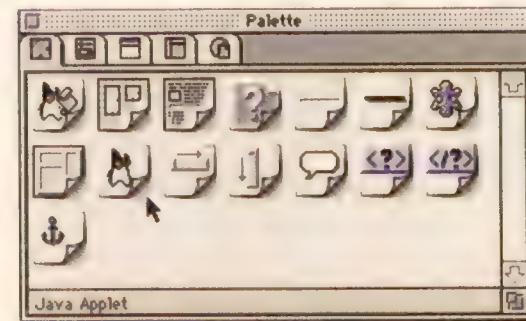
This is all set to change. CyberStudio side-steps these constrictions, but stays well within the rules of HTML. It allows near pixel-perfect placement of objects using an underlying grid system (the different margins of Explorer and Navigator are compensated for by a 10-pixel margin). CyberStudio manages this by using attributes of its own within the HTML. Yes, these do add to the file size, but we're only talking about one or two bytes!

The program was written from the ground up as a Mac package and so many of its features are as familiar as the OS itself. And the layout of a page is the same as in any DTP package.

Prior to CyberStudio, to create a sophisticated layout you'd use one of the packages mentioned above, and perhaps the excellent BBEdit to clean up your code and do a basic layout. Then you'd tweak the code manually to get the shape you want, as well as using tricks such as invisible single-pixel GIFs to get the exact placement. But with CyberStudio you drag and drop all

the elements you want from a palette into the grid layout – which you can lock to if you want. You then move them about freely, allowing you to focus on making the page look good rather than the limits of HTML. The code is available, should you want to edit it. And if you're setting up a frames-based page, you need never make a second non-frames version as CyberStudio puts both sets of code into the page.

Site management is simple. You drill down into page relationships with a click of the mouse. You can also look at the links to and from



You start with a blank page and then drag and drop all the ingredients for your page from the palette

individual pages, the site as a whole, and by clicking on an image see where it's used. This feature compares favourably with standalone packages such as Adobe SiteMill (see the review on page 66).

If you've used Quark Xpress, then you'll feel right at home – the feel and keystrokes are exactly the same. I've tried many HTML editors and not one could create the exact layout I wanted or had all the tools and flexibility I needed. CyberStudio gets very close. It's not perfect, but it's the best on offer by a mile!

★★★★

Mike Hales

CyberStudio 1.0
Price \$349 (£220)
Pros Totally intuitive, closely married to the Mac OS, powerful tools and good site management features
Cons Only for the Mac
Platform Mac
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HahtSite 2.0

This Web server software handles databases well but is let down by flaws

HahtSite is a relatively lightweight alternative to the Web site development tools marketed by Microsoft and Symantec. In the three CD bundle, you get a 30-day trial version of Quarterdeck's WebStar server software to get you going, the Integrated Development Environment (IDE), an Applications Server and a software developer's kit (SDK).

The IDE is at the heart of the product. Unlike Microsoft's InterDev, which is NT-specific, HahtSite supports a variety of Web servers and some forms of Unix. However, the immediate benefit for the user of this product is that it prepares compiled code, rather than InterDev's interpreted code, which handles dynamic page formatting on the Web server. This gives you much better performance and potentially improved security to boot.

It should take no more than about an hour to build a simple interactive site. The best way to get to grips with HahtSite is to follow the tutorial which takes you through the basics – including some simple Visual Basic coding, form creation and database connectivity.

Unfortunately, while the tutorial introduces basic information on how to build a site, it skirts around the underlying concepts, which is important if you're new to building Web-based database applications. For that, you need to refer to the user manual. HahtSite uses the concept of projects which contain all the elements associated with a site. You don't get wizards for different site types, but you do get plenty of samples and shortcuts to help you along the way.

Not quite WYSIWYG

The Web page editor claims to be WYSIWYG but when you place controls, boxes or database objects onto the page, the design view doesn't quite give you true WYSIWYG representation. This is irritating rather than a problem,

because the object placeholders are correctly replicated at runtime.

HahtSite uses its own server-side version of Visual Basic, HahtTalk. It assumes you're familiar with Basic and Visual Basic 3 syntax and if you are you can write code straight into a Web page and publish it with a couple of mouse clicks. A dedicated HahtTalk toolbar provides you with the formatting you need to create expressions and statements and serves as the backbone to writing widgets for your site. A widget is a pre-packaged object and the SDK has 11 of them including form handlers and Java applets. Widgets can have properties that are user-defined and this is a flexible way of working. HahtSite

updated, but in the meantime, you can cut-and-paste directly from VB 3. There are two sides to this. On the one hand VB 3 is the most popular and stable Windows programming language around. However, VB 4 has been available for a while and has been superseded by VB 5.

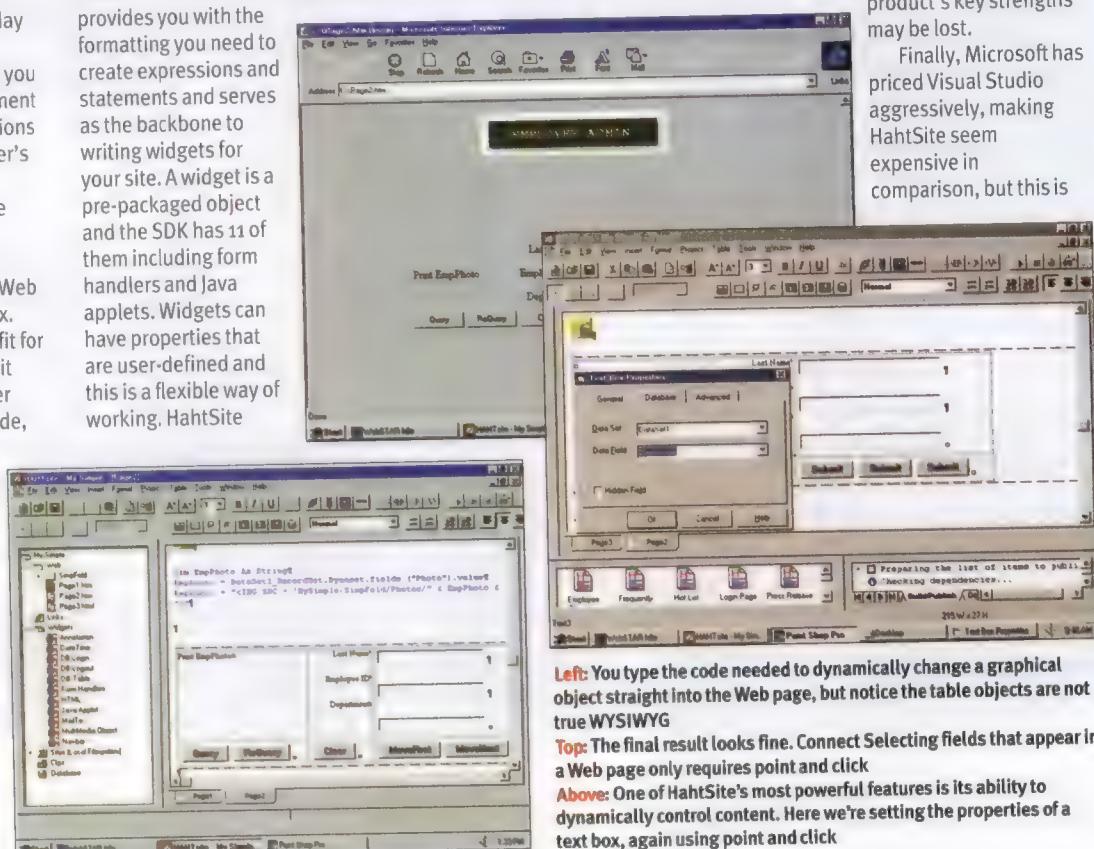
In the initial stages, you'll need some technical hand-holding, but

remove toolbars but at some point, you'll need all of them because they provide access to functions crucial to developing your Web applications.

As an IDE, it's very complete. HahtTalk Basic is a good starting point, but with JavaScript likely to become the de facto standard we wonder whether one of this

product's key strengths may be lost.

Finally, Microsoft has priced Visual Studio aggressively, making HahtSite seem expensive in comparison, but this is



Left: You type the code needed to dynamically change a graphical object straight into the Web page, but notice the table objects are not true WYSIWYG

Top: The final result looks fine. Connect Selecting fields that appear in a Web page only requires point and click

Above: One of HahtSite's most powerful features is its ability to dynamically control content. Here we're setting the properties of a text box, again using point and click

includes a widget wizard which lets you either build using HahtTalk Basic or an OLE server and allows you to state whether the widget will be dynamic or static at runtime.

The range of pre-built objects isn't extensive but the database widgets are worth a mention. They provide all the steps you need to make a connection to an ODBC-compliant database and give you the option to create dropdowns or add SQL. There's an SQL helper which should help with the syntax, but it's worth testing each step before committing to final production. For those nervous about plumbing these depths, it's possible to create database access to specific portions of a table without writing a line of code.

VB 4 and 5 will be supported as soon as the VB scripting engine is

this support is missing. We had a query and despite making several calls and leaving the distributor with a detailed explanation of the problem, we didn't get a response. We eventually resolved the problem ourselves but it's a worry that with a new product the UK vendors may not be fully trained.

Verdict

HahtSite will get you on the road to preparing rugged Web applications but it's let down by its four-pane interface which can appear very cluttered. This is because by default, HahtSite opens up with four floating toolbars. There are the usual tools for creating list and combo boxes, automatic tags for headings and alignment and so on but there's too much on screen for our taste. You can hide panes and

outweighed by the fact that its main strength – the easy construction of open standards based applications with real database connectivity – outweighs price considerations.



Dennis Howlett

HahtSite 2.0

Price Single-user IDE/SDK £1,250; applications server £2,950

Pros Well-integrated IDE with powerful database connectivity options, conformity to open standards

Cons Cluttered interface, embedded code language not up-to-date, poor support

Support For one year via telephone or through the Web site

Contact Haht Software UK

Phone (01392) 410994

URL www.haht.com

Optra S 1250

The Optra is a printer and a Web server, with excellent output at fast speeds

Why do you need a network printer with an embedded Web server? Well most users won't need it, but any network manager will wonder why printers have never had this facility before. Having a Web page linked to your printer means you can get access to all the printer's status information from anywhere just by inputting the printer's IP address into a browser.

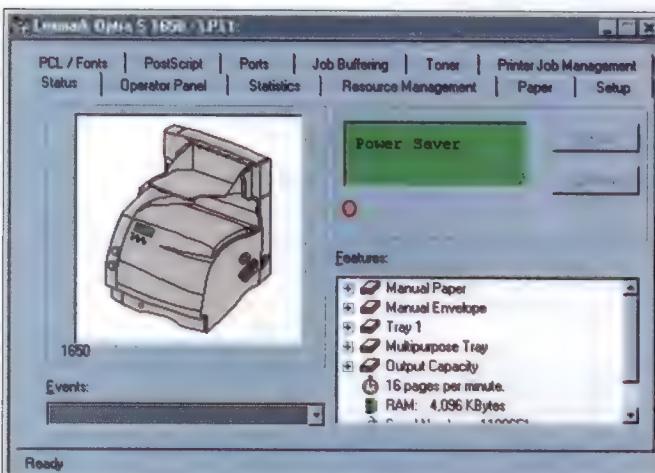
Having said that, the actual information on the Web page is quite limited. It contains the current status – off-line, or online – and if you're printing out the site then there's the name of the job and the page number it's printing. However you'll have to press the reload button on your browser



quality of output is superb and the speed is more than adequate for most small offices, although if you need something faster there's the 15 and 18 page-per-minute models.

The actual network software, MarkVision, also deserves a mention. With it you can control everything about the printer from anywhere on your network, you can even turn the system off-line and work through the menu system without touching the printer.

The 1250 has more than enough printing and paper capacity for any



Everything you ever wanted to know about your printer, at the click of a button

quickly to catch the job name since the printer outputs at an impressive eleven pages per minute.

As well as the status information there's more general information in the form of several Web addresses – described as links of possible interest, utilities and drivers which includes the Lexmark home page, Technical Support, Printer Supplies, Registration and Firmware Updates. This page is actually configurable, although it's quite a long business and the beta copy of the Optra manual didn't mention how to do it.

Looking at the conventional side of the printer. The actual

small network, and the additional Web server software and MarkVision software make it a network manager's dream printer.

★★★★
Marcus Austin

Lexmark Optra S1250
Price £899 (ex VAT) likely street price £638 (ex VAT)
Pros Remote diagnostics, paper capacity
Cons High retail price, but very good street price
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URL www.lexmark.com

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WebCast ProServer 1.0

This server software promises live video over the Net without a plug-in

Imagine if you could take the output of any video camera and broadcast it from your Web site without visitors needing to download a plug-in. Sounds unlikely doesn't it? But this is what WebCast offers.

WebCast can take an input from any Video for Windows source and broadcast it. However, the user has to be running Netscape Navigator 3 or higher. Internet Explorer 3 isn't supported, although IE4 will be. You can also broadcast audio, though you'll need a plug-in for this.

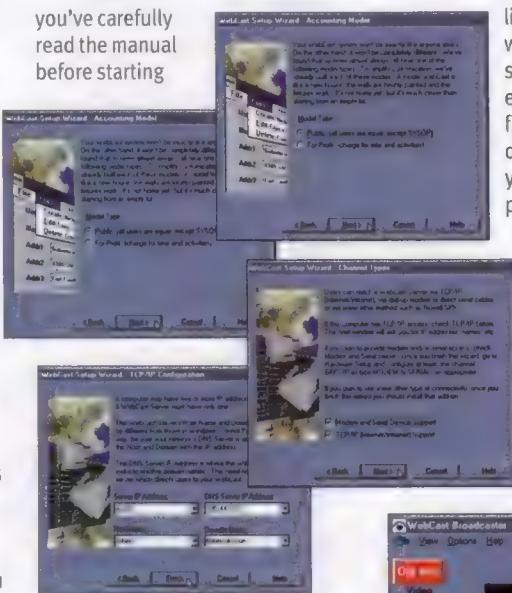
In addition, there are text chat facilities available to let viewers interact with the person on the video. This system has a range of applications, not least of which is as a customer service tool.

Tricky installation

Unfortunately the ProServer version we tested, as you might expect from

This is the simplest part of the install. There's no need to reboot, so next the set-up wizard starts, which takes you through entering the basic data you need to configure the server. It's about here that things get a little confusing if you're not quite sure what's going on.

Of course if you've carefully read the manual before starting



builds a set of distribution files to install the required software on the PCs (Windows 3.1x/95/NT) that actually have Video for Windows sources attached.

You're not really told what to do, but it's reasonably easy to guess you need to select Video

Broadcaster from the list of programs. The wizard then builds a single self-extracting executable, or a set of files for floppy disks depending on how you want to move the program to the broadcast clients (they can be attached to the server via Telnet/IP, Netware SPX, modems or direct serial connections).

Connecting client and server

If all your settings are OK, the broadcast client will now connect to the server. You'll be presented with a Telnet session connected to a set of menus to configure your user details on the server. Once this is done you log out and connect again and the server then pushes a client software update over the network. This, in turn, runs another set-up program. You then get a graphical front-end to the same Telnet session text menu system, with an added option, Video Broadcaster.

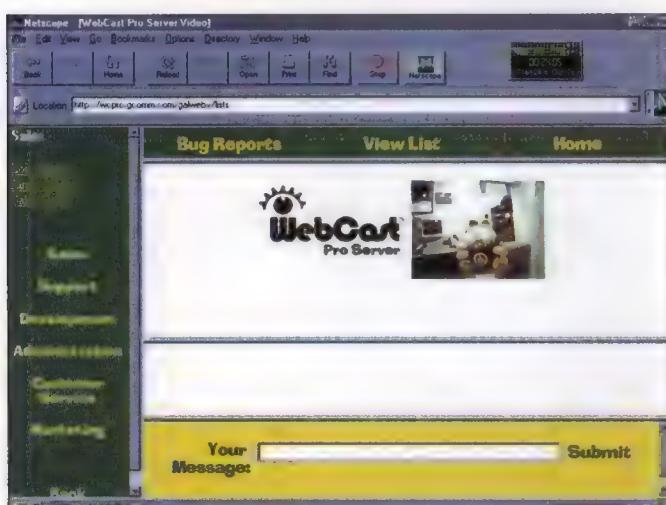
Clicking this button opens the WebCast Broadcaster window. This is where you control the video source being broadcast and also interact with viewers via the text-based chat system. It's at this point that you find out if your video configuration is working or not.

If there are problems, you'll need to check all the settings with the configuration editor. This has a massive list of options displayed in one pane of a three-paned window. Help text and the choices available are shown in the other two, while settings that differ from the default are highlighted in bold.

Verdict

WebCast is groundbreaking, even given all the fuss about push. The potential for customer services for businesses is enormous, but the installation procedure and management interfaces need work. This product can be recommended to organisations which want to experiment with reaching customers on the Web in a personal way. But for those looking for an easy answer to video on the Web, you'd be well advised to wait.

★★
Paul Edge



Powerful features are offset by limitations and a tricky install

a version 1.00 product, is very difficult to set-up. The server component of the system needs to be installed on an NT system, 3.51 or 4.0, or Windows 95 for smaller set-ups. ProServer comes on an auto-run CD and clicking on Install starts off a process which promptly places more than 30Mb of files on your hard disk with an impressive 757 files in 59 directories within the main program folder.

set-up you'll know what to do, right? Wrong, there are three paragraphs of text about this stage of set-up in the 20 page manual, and not a lot else in the online help.

Assuming you're fairly happy with TCP/IP, Web servers and know the particular details for your network then you should be able to carry on with the next stage: running the broadcast client configuration wizard. This process

The executable then installs Galacticomm's Worldgroup Manager connectivity software, pre-configured to connect to your server. Running the Worldgroup Manager displays an icon that connects to the server running ProServer. You can also add your own icons to Worldgroup Manager – a competent piece of connectivity software supporting Telnet with Zmodem protocols – to connect to other services.

WebCast ProServer 1.0

Price \$995 (£625 for 1 broadcast stream and unlimited viewers); \$495 (£310) for each five additional broadcast streams, up to maximum 26

Pros Excellent technology; great for some specific applications

Cons Very hard to set-up; poor documentation; needs a high-spec machine for server software; IE3 not supported

Platforms Windows 3.x/95/NT

Contact Galacticomm

Phone (001954) 585-5990

URL www.gcomm.com

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GREAT
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Fusion
Hot Metal Pro
PageMill
QuickSite

It's Java for
the rest of us.

QuickView Plus 4.0

This utility is a rare must-have tool for viewing all manner of files.

Cliché alert! Once you've used this little utility you'll wonder how you managed without it. It makes using the Internet so much easier.

Clichés over... It's all true. QuickView Plus (QVP) is so simple, it's mind-blowing. It allows you to view files of almost any type without running, or even owning, the necessary application. QVP can handle word processor documents, graphics, HTML, databases and spreadsheets in all kinds of obscure and not-so-obscure formats. If you've got Windows 95, then you've already got a cut-down version, but the full program adds many more formats and facilities.



Foreign file formats are no longer a problem with QuickView!

QVP is added as an option in the Explorer menus. Among the features, QVP can view text documents fully formatted, you can drag-and-drop new files into the QVP window, peek inside program files (.exe and .dll) and view, print or extract the contents of compressed files. You can even check out all those funny little items in your cache. To keep you up-to-date Inso's Web site gives a full list of file types supported along with details of updates.

You can also integrate QVP with the latest browsers to view files on the Net. And you can add QVP to email packages such as Microsoft Exchange or ccMail, and the

program handles MIME and UUEncode objects. Eudora is being added for version 4.5.

Windows 3.x users get features that Windows 95 users take for granted, such as File Find, and can open files from 32-bit Windows 95 programs. This could be a godsend in a mixed environment office. QVP views Mac files, but there's no Mac version of the program. Sadly, it can't handle a few of the more popular, if cheaper, PC formats, such as Serif or GSP. (A filter for Lotus WordPro 96 can be downloaded from the Lotus Web site: www.support.lotus.com/wordpro.html).

And don't believe Inso's advertising, which claims that you can preview Internet files without downloading. What you can actually do is view the contents of a zip file without needing to save it all to disk. But you still need to wait for it to download first.

Script July 97
internet screenplay application



These are minor niggles about a top-notch utility. Once you start using it you'll find a hundred uses you never dreamed of. Damn, another cliché.

★★★
Charlie Harris

QuickView Plus 4.0

Price: £39 (ex VAT); free 30-day trial available online

Pros Supports a wide range of formats; easy to use

Cons A few popular formats not available

Platforms Win3.1, 95

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Microlin NB 33.6

The £199 price tag and the 33.6Kbps speed make this modem a good buy

The £199 Microlin NB 33.6 Voice is a conventional data and fax PC Card modem which supports line speeds up to a maximum of 33.6Kbps.

Pace recognises that the card might be used with a cellular phone and so the specification includes support for MNP10, an error correction protocol specifically designed for mobile communications.

The fax specification is also impressive, with support for Group III faxing, at speeds of either 9.6Kbps or 14.4Kbps. The Microlin can't, however, be upgraded to 56Kbps.

A commendable feature of the Microlin NB 33.6 Voice is its power consumption. PC Card modems are notorious battery eaters for laptop

printed manual but incredibly you have to buy it separately for £1.95.

What sets this modem apart from a raft of me-too PC Card modems is its support for voice mail and Caller Line Identification (CLI). The modem comes bundled with the familiar SuperVoice 16-bit Windows 3.x/95 application which allows you to run a voice mail system from your notebook and identify the number of an incoming call.

These are obviously useful facilities but we think they have such a narrow practical application as to render them irrelevant gimmicks. After all, we might be wrong on this but PC Card modems are intended to be used on the road, away from fixed phone numbers. As a result notebook users tend to make, not receive, phone calls. These features are best suited to static desktop PCs and desktop modems.

The paltry documentation, the absence of crucial software and the



Caller line identification sets this apart from the raft of me-too modems

users, even when they're doing nothing, which is bad news for folks on the road. We can vouch for Pace's claims that the modem has both low power consumption plus an ultra low power standby mode.

First impressions count and the typical user in its target market doesn't want to fight to install the PC Card. Happily, the Microlin NB 33.6 Voice was a cinch, and under Windows 95, and we were able to connect to Demon's Internet service at 33.6Kbps first time – it worked like a dream.

However, the documentation is decidedly thin and of limited specific use. There is a proper

inclusion of somewhat odd features detract from what is quite a capable, reasonably priced PC Card modem. If you can get a good deal, it's certainly worth considering.

★★★
Roger Gann

Microlin NB 33.6 Voice

Price £199 (ex VAT)

Pros Unique (though somewhat superfluous) support for voice mail and CLI; reasonable value

Cons Mediocre documentation; absence of software drivers

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Realimation STE

A very powerful 3D environment creation package, but not for beginners

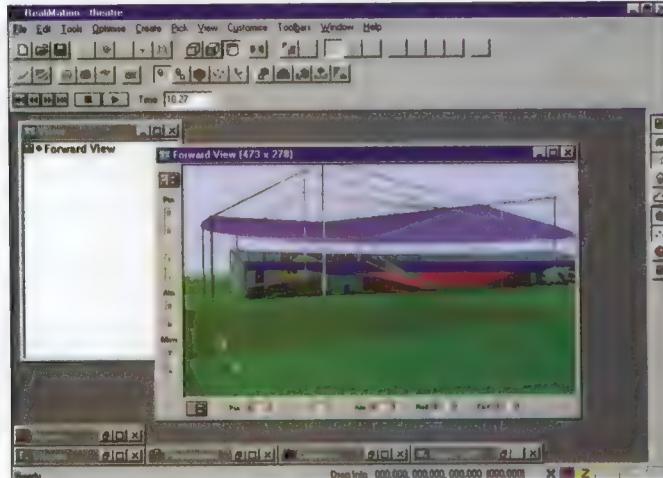
Realimation is an animation package, a 3D presentation program, a game developer's tool and a 3D graphics engine for the Web. However, visitors to your Web site will have to download a Realimation plug-in, available for both Navigator and Internet Explorer, to view your creations.

At the heart of the system are Realibases. These are databases that define all the elements in a presentation, such as the camera view, the objects you've created,

Realimation takes data from a wide variety of sources and incorporates it into one Realibase. Complete 3D files can be imported and worked on within Realimation. If the original has motion, Realimation will interpret this as it incorporates the data into the new Realibase.

You can embed a hotlink anywhere in a scene. That hotlink can open another Realibase, or any other file type, from text to video. More importantly, hotlinks that begin with http will launch your browser and load a Web site.

Realimation is a powerful tool, although beginners may feel a little overwhelmed. It really comes into its own as a visualisation package to be used with other programs that generate the original scenes or



You can import from a number of other 3D sources and the attributes will be kept

the lighting to apply to each one, and the motion of your scene.

You create a scene from component parts as you would any 3D image. You have full control over these parts, ranging from the way they're lit to how they work with other elements in your scene. Each element is saved in a Lister. These are independent windows that contain all of the objects of a particular type such as shapes, atmospherics and light sources.

There's a myriad of rendering engines to choose from, but Realimation solves this problem by allowing you to choose which engine to use dynamically. You can create your scene and then test it in a number of rendering engines to find the best image. You'll have to weigh speed against memory and image quality; but this versatility is a great boon.

objects. Once the Realibase is set up, fine tuning existing 3D data is the name of the game. Tweaking the objects, improving the texture mapping and camera angles of the scene are all possible. You can then incorporate this data into your visualisation; add hotlinks, put the file on the Web, or send it to your clients on disks complete with the freeware viewer.

★★★

Dave Howell

Realimation

Price £349 (ex VAT)

Pros Produces very small file sizes, flexible tool

Cons For professionals only; proprietary format

Platforms Windows 95, Windows NT

Contact Datapath

Phone (01332) 294 441

URL www.realimation.com

Flash 2.0

Flash is now a true multimedia program. All it lacks is a decent manual

Flash is an excellent tool for adding animation to Web sites, but version 1.0 had no sound support at all, which is a bit of a problem when you're claiming to be a multimedia program.

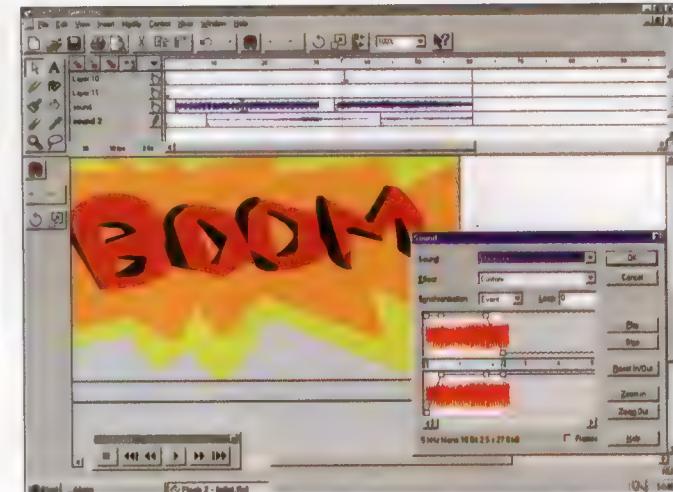
However, within just a couple of months of being bought and taken over by Macromedia, it has been upgraded and includes sound, plus a few useful new graphics options.

The program can now import WAV and AIFF sound files, and these files can be included alongside graphics files in Flash's onscreen Library palettes. Once the sound has been placed in a Library, you can alter its frequency and sampling rates, taking them right

automatically start streaming the sound when a Web page is being downloaded to a user's browser.

You can control the duration of the sound and modify each sound by adding up to eight envelope points in the sound display windows. Each point can be linked to an effect chosen from the Effects pull-down window. These sound tools are fairly basic, and the envelope tools certainly don't provide the degree of control you'd get from a dedicated sound editing program. However, they do provide a quick and easy way of adding sound to a site and allow Flash 2 to genuinely call itself a multimedia Web authoring program.

Macromedia has also thrown in a few new graphics tools, such as the ability to auto-trace GIF and JPEG bitmap files and turn them into smaller vector graphics, improved lasso and Fill tools.



Macromedia has quickly revamped Flash to include sound and a few other goodies

down to 5KHz mono and 2-bit sampling if it's needed. Obviously, this will affect sound quality, but there's no need to use 16-bit stereo sound if all you want to do is add a few beeps to your Web page.

To link sounds to buttons or animations, you go to the timeline area in Flash's main workspace, then right-click on the required frame in the timeline. This calls up another dialog box containing controls that can be used to edit, and also to synchronise it with your animations or graphics. The synchronisation pull-down menu allows you to start or stop the sound at a specific frame, or to

Flash 2 is a worthwhile addition to any Web designer's software arsenal. The only criticisms now are that the original lousy tutorials are still lousy, and the retail price is still too high.

★★★

Cliff Joseph

Flash 2

Price £199 (ex VAT)

Pros Versatile drawing and animation tools

Cons Dreadful documentation, price

Platforms Win 95, NT and Mac

Contact Computers Unlimited

Phone (0181) 200 8282

URL www.macromedia.com

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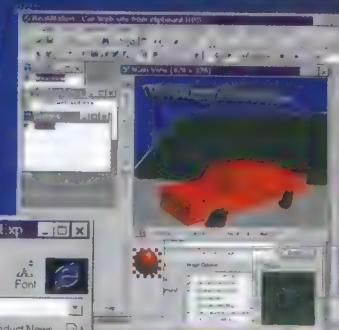
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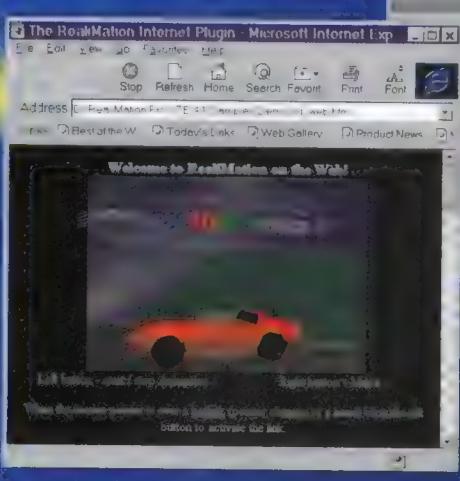


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REANIMATION

Webtricity

This suite promises easy creation of active graphics for a Web site

Like Corel's WebSuite (Internet Magazine, June, page 80) Webtricity sets out to be a complete Web creation package. However, unlike Corel, Micrografx has stuck with what it does best: creating good graphics with easy-to-use, powerful applications. The company has left the Web serving and other techie parts to the user.

The suite comes in five parts (Media Manager 2, Picture Publisher 7, Simply 3D 2, Designer 7, and Quicksilver) on four CD-ROMs. There are also two manuals - there's a huge tome devoted to clip-art, fonts and pictures and one 300 page manual for the whole package.

Huge installation

Installation is simple if not a bit slow. Well it takes time to install 173Mb if you want the whole set of applications, or even the 98Mb if you just want the minimum. The program claims to run on a 486 with 8Mb of memory and it worked fine on my less than state-of-the-art 90MHz, 16Mb of RAM machine.

Webtricity isn't just an amalgam of Micrografx packages with a few Web graphics thrown in. All the applications have had Internet-related features added and the accompanying online help and manuals have been re-written with the Web in mind.

The application manual is split into sets of tutorials for each part of the program that take you through creating graphic elements for your Web page (including logos, background textures and animated logos).

The Media Manager sits at the heart of the package and allows you to view clip-art, photos and images and to drag and drop those images to the various components of Webtricity or export them to other packages - using anyone of the 55 different export and import formats.

Producing pictures

Designers will find themselves largely using Picture Publisher 7, Micrografx's bitmap picture producer and editor. Picture Publisher has more features than its nearest competitor, Photoshop, but

more importantly it's much easier to use than Photoshop. New Web features include the ability to use the spray paint tool to produce page backgrounds. There's also a Web background previewer, which means you don't have to keep loading your Web browser.

The standard Netscape Navigator and Microsoft Internet Explorer browser colour palettes are loaded as standard, and you can select multiple images to batch change them to your default

If you want to use vector graphics rather than good old GIFs and JPGs then Micrografx has included the Quicksilver 3 browser add-in. Using vector graphics instead of bitmaps can seriously improve the speed at which visitors to your site receive large pictures. Instead of sending all the image you're just sending outlines of objects, their positions and the colour information. As long as the browser at the other end has Quicksilver



Easier 3D design

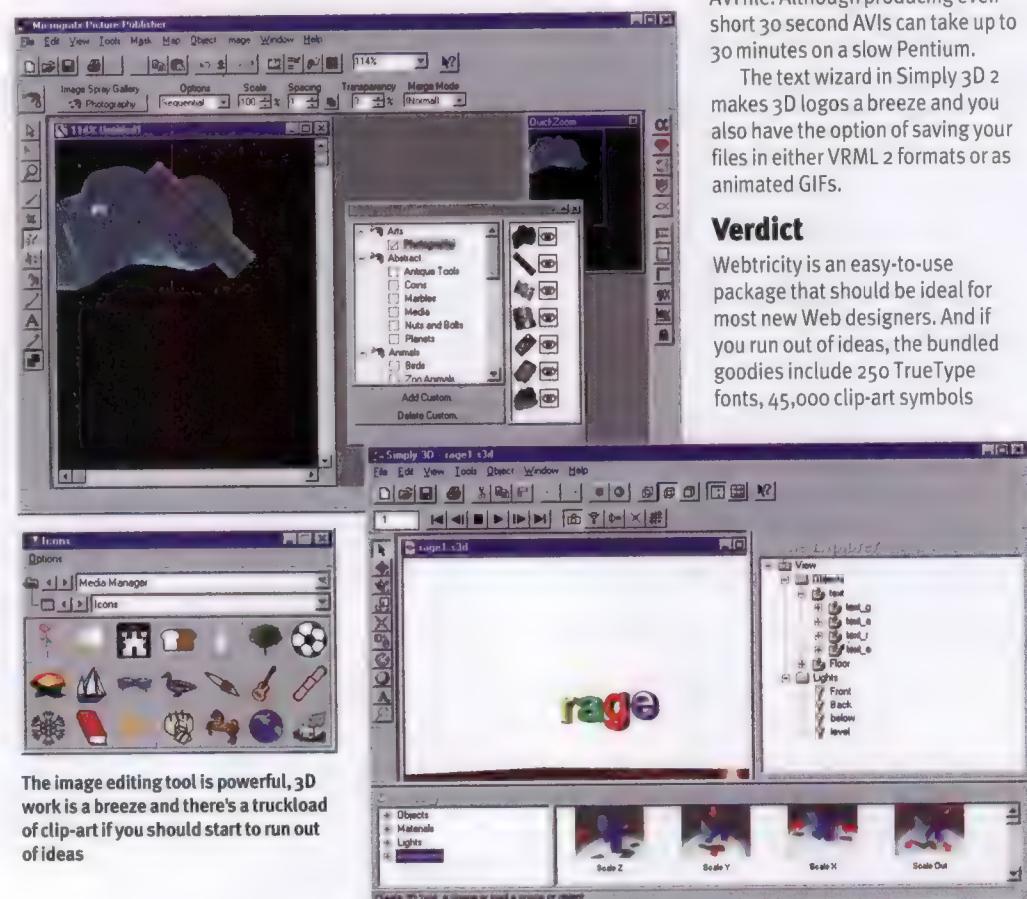
The 3D designer deserves special mention. Ever since the Simply 3D package was launched it has had one of the most difficult interfaces to understand and use. Even sales execs who sold the product for years admit they had trouble using it.

However, the new package lets you take something like your company name or logo and make it into an all singing and dancing 3D VRML 2 site, an animated GIF or an AVI file. Although producing even short 30 second AVIs can take up to 30 minutes on a slow Pentium.

The text wizard in Simply 3D makes 3D logos a breeze and you also have the option of saving your files in either VRML 2 formats or as animated GIFs.

Verdict

Webtricity is an easy-to-use package that should be ideal for most new Web designers. And if you run out of ideas, the bundled goodies include 250 TrueType fonts, 45,000 clip-art symbols



The image editing tool is powerful, 3D work is a breeze and there's a truckload of clip-art if you should start to run out of ideas

standard. A neat little feature is the ability to select the range of colours for the GIF transparency background colour rather than just a single colour, which can be tricky and doesn't always produce a clear background. Lastly there's a JPG compression preview to show just how much the compression is going to degrade the final picture quality.

In addition, there's an excellent online resource for those using the package at www.micrografx.com/PicturePublisher/default.asp. There's a user forum, a free downloads page and a history page.

loaded images can be downloaded faster. However, it does rely on people having Quicksilver at their end and you're limited to created images, scanned in pictures still need GIF or JPG compression.

If you do want to use Quicksilver there's a neat file audit wizard that gives tips on file download times. The audit feature shows you the image and the amount of time it would take at 28.8Kbps, 14.4Kbps and 9.6Kbps. It also gives tips on how many points the vector graphic should include or what colour resolution a bitmap file should be.

animated GIFs, HTML templates, 3D objects and images, should help relieve designers' block.



Marcus Austin

Micrografx Webtricity

Price £129 (inc VAT)

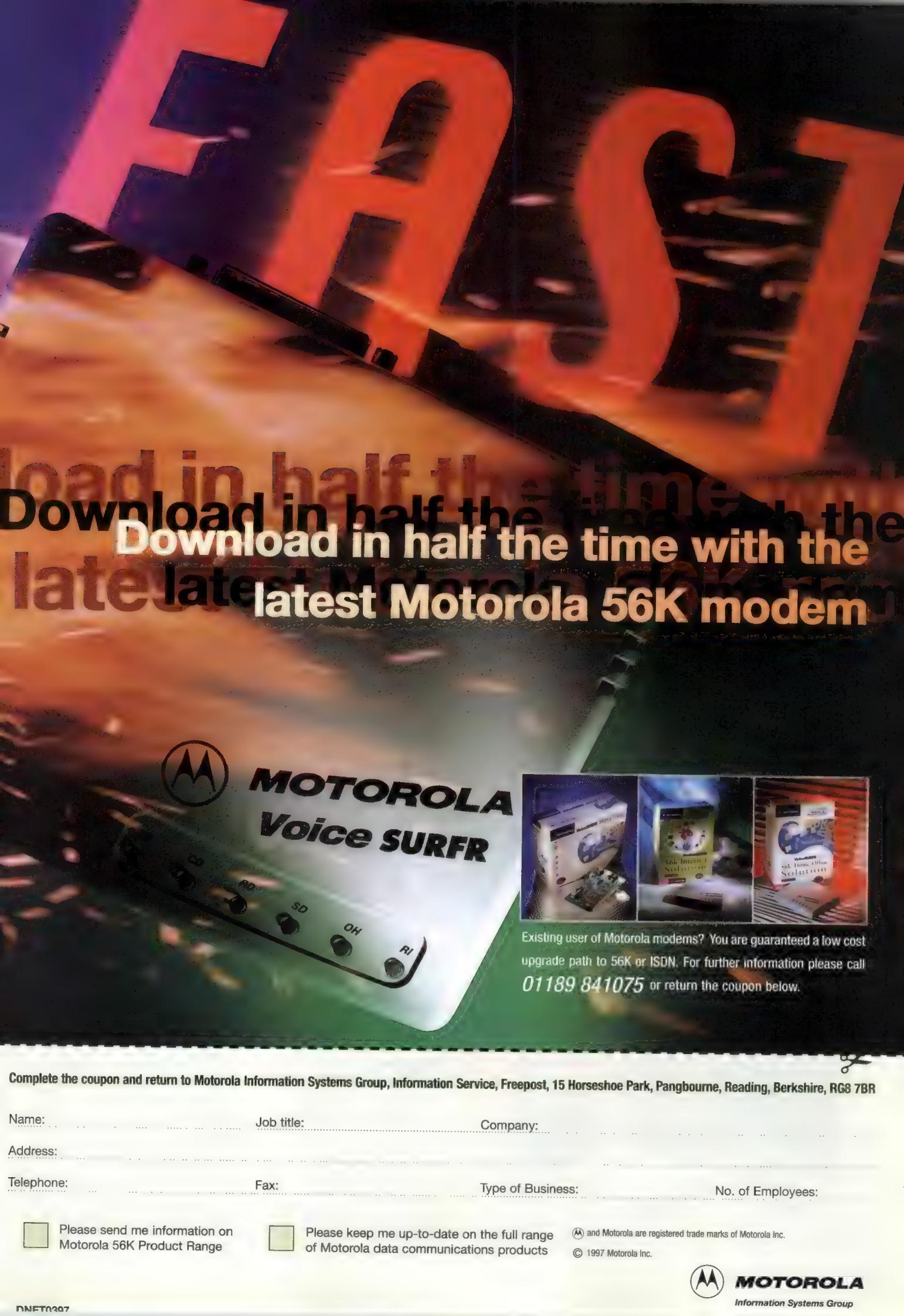
Pros It's cheap, fast and easy to use
Cons Only available on the Windows platform

Platforms Windows 95, NT 3.51 and above

Contact Micrografx

Phone (0800) 626 009

URL www.micrografx.com/webtricity/



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MOTOROLA

Information Systems Group

New this month

Sanyo digiCAM



This is a new arrival on the digital camera scene. The camera boasts two focus selections (640x480/320x240), an f/2.8 5mm lens and a 4Mb internal flash memory which can hold up to 60 hi-resolution images or 120 at low-res. The camera takes four AA batteries and has a built-in LCD viewing screen.

Supplier The Digital Camera Company
Price £450
Platforms Windows 95/NT, Mac OS
URL www.digital-cameras.com/

SoundPoint PC

Riding on the back of the growth in Internet telephony come this hands-free device. Polyspan designed the speaker themselves as well as the algorithms that the device uses to reproduce high quality sound. The deal also includes a handset for private calling.

Supplier Polyspan
Price £249
Platforms All
URL www.polyspan.com

Hayes Accura 56K

Following its across-the-range price cuts Hayes has released its new 56K modem, based on the K56flex technology, in both internal and external formats. Priced at less than £170, the modem ships with Quarterdeck's InternetSuite 2, WebTalk, plus a selection of free trials with Internet access providers, including AOL and CompuServe.



Hayes moves the Accura up to 56K, available in internal and external formats

Supplier Hayes
Price £169 internal; £189 external (both include VAT)
Platforms Windows, Mac OS
URL www.hayes.co.uk

CompuServe client software

CompuServe is shipping out new clients for Windows 3.x, Windows 95 and the Mac OS. CompuServe 3.01 for the Macintosh has the same look and feel as the Windows 95 version plus a far friendlier automated PPP script configuration. Windows 3.x users now get to use Internet Explorer 3.0a, while the Windows 95 version, 3.03, boasts improved mail speeds. We review the new Mac client next month.

Supplier CompuServe
Price Free
Platforms Windows 95/3.1, Mac OS
URL www.compuserve.co.uk

WebID

This is a security product designed to protect individual pages on a site by using Security Dynamics SecurID technology and a PIN. WebID supports Microsoft's Windows NT 4.0, Internet Information Server (IIS), as well as the Internet Explorer and Netscape Navigator browsers.

Supplier Security Dynamics
Price On application
Platforms Windows NT 4.0, Internet Information Server
URL www.securid.com

FirstClass Intranet Server

Fresh from the stable of the Canadian software company SoftArc comes this workgroup/email server product. FirstClass Intranet Server (FCIS) offers email, database access, remote access, forms processing and information publishing services – all through either the FCIS client or any Web browser. FCIS supports POP3,

All the latest Net product news brought to you in easy-to-manage chunks. Send your new product information to mikebr@internet.emap.com.

HTTP/HTML, Finger, SMTP/NNTP and MIME.

Supplier SoftArc
Price £765 including 10 user licences
Platforms Windows 95/NT, Mac OS
URL www.softarc.com

Internet TV

The Internet TV box promises to deliver full Internet access, including email directly into an ordinary TV set using the standard telephone system for Net access. You can surf from your armchair using the remote control or the optional infrared keyboard. Internet TV is based on a 40MHz ARM processor and has 4Mb RAM, 4Mb ROM and a built-in 33.6Kbps

modem. The product will support HTML 3.2, forms, tables and frames.

Supplier Wincom
Price £370
Platform All
URL www.wincom.u-net.com/win12.htm

Microsoft Site Server 2.0

A new member of the BackOffice family is born with this release from Microsoft. Available in two editions – standard and enterprise, Site Server is aimed at corporates looking to set up intranet and Internet sites. The enterprise edition includes extra software for companies wanting to create large and/or electronic commerce sites. Site Server is based on Windows NT Server NOS and Internet Information Server. Download the 90-day trial version.

Supplier Microsoft
Price £1,200 standard; Enterprise £3,800 (both ex VAT)
Platforms Windows NT Server 4.0
URL www.microsoft.com/siteserver/

Microsoft NetMeeting 2.0

Microsoft has released a new version of NetMeeting. Enhancements to the product include standards-based multipoint data conferencing, video conferencing based on the ITU H.323 standard and Net telephony, again based on the ITU standard. Next month's *Internet Magazine* will review it in full.

Supplier Microsoft
Price TBC
Platforms Windows 95/NT
URL www.microsoft.com/netmeeting/

Net-Inter-Net

This is a single-box solution for small companies looking to access the Net through a dial-up account. Up to 250 people can be connected



Multiple Net access via a single dial-up account

to the Internet concurrently. An ISDN version is also available.

Supplier Sherwood Data Systems
Price £1,400 (ex VAT)
Platform All
URL www.net-inter-net.com/Net-Inter-Net/

Sharing 1.0

A software solution to the problem of multiple access to the Net via a single dial-up account. You don't need a router or a proxy server and you can combine modems to provide high-speed access for a lot less money than an ISDN line. Download the 30-day trial version.

Supplier MidPoint Software
Price £199 for five users; £399 for 20 users; and £799 for 50 users
Platform Windows 95/NT, OS/2
URL www.midcore.com/

baCatalog 1.0

This CGI application creates a Web storefront for businesses looking to trade on the Net. Installed with a minimum of fuss, it runs under a variety of platforms (see below). The product is made up of three parts: the program; the baCatalog Manager, a Windows app that sets the parameters for the program; and the baCatalog Database.

Supplier Basic Access
Price \$279.95 (£175 ex VAT)
Platform Windows NT, Microsoft Internet Information Server, Netscape Enterprise Server and Netscape FastTrack Server
URL www.basicaccess.com

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ISDN Terminal Adapter

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Features :

- Call bumping.
- Two analogue ports.
- Speeds up to 128Kbps.
- Bandwidth-on-demand.



Elite 2864I

V.34/Fax/Voice/ISDN Terminal Adapter

Price £445

(£522.88 including VAT)

Features :

- Speeds up to 128Kbps.
- Direct fax printing through in-built parallel port.
- Integrated 28.8Kbps Analogue modem capability.



Prestige 2864I

Remote Access Router

Price £739

(£868.33 including VAT)

Features :

- IP / IPX Routing
- Analogue Port
- V.34 Modem capability.
- Network Address Translation.



ISDN

Fax : 01223 - 495928

<http://www.cambridge-isdn.com>

Sales@Cambridge-ISDN.com.

Hot Downloads

Netscape Communicator Preview Release 4

The latest Communicator update now includes the push product, Netcaster, which allows channel-style content to be delivered direct to your desktop and will also work off-line. One of the first channels available is the DevCon (Developers Conference) where you can offer feedback on the product.

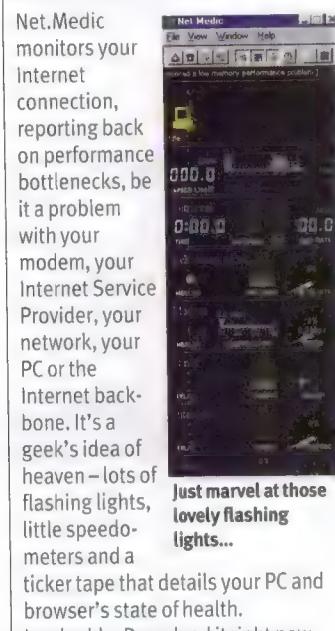
URL <http://developer.netscape.com>

Download size 8.5Mb

Platforms Windows NT/95

Price Developer preview version free

Net.Medic



Just marvel at those lovely flashing lights...

It's a geek's idea of heaven – lots of flashing lights, little speedometers and a

ticker tape that details your PC and browser's state of health.

Invaluable. Download it right now.

URL www.vitalsigns.com

Download size 800Kb

Platform Windows NT/95

Price Demo version free/full version

\$39.95 (£25)

GeoBoy

If you want yet more detail on the route your Internet packets are taking, install GeoBoy. You can view the traffic on a flat map or on a 3D globe and zoom in on geographical features, such as cities and rivers. The program allows you to see where Net blockages are by resolving geographical locations from a series of cache files.

URL www.ndg.com.au/products/gb/

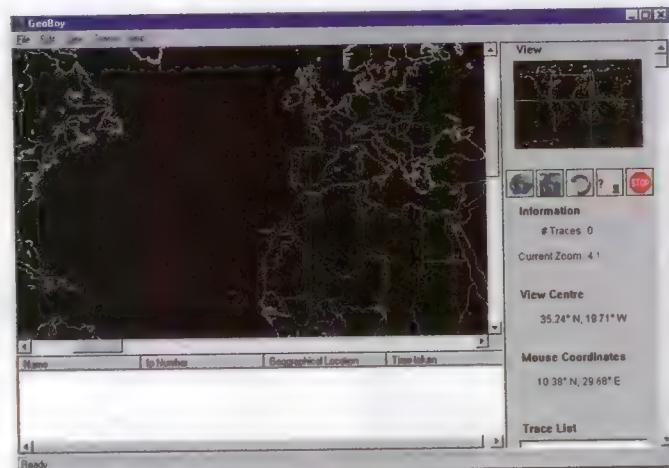
Download size 1.1Mb

Platform Windows 95/NT

Price Free 14 day demo

WebSense 3.01

The other side to the censorship story is making sure that the Web is



GeoBoy lets you follow the route your Net packets are taking, in 2D or 3D

used appropriately at work.

WebSense from ElectricMail, the company that brought us Eudora Pro, is designed to control access to sites in big businesses. Managers can restrict access to the Net on a per-site and per-user basis. The master database contains 60,000 URLs and newsgroup addresses, all of which are categorised. Updates to the database are automatically downloaded every day. The software is Windows NT-based and you can download a free copy containing a database of 50 URLs.

URL www.elmail.co.uk/downloads

Download size 1.3Mb

Platform Windows NT 3.51 or higher

Price Demo version free

ON Guard Internet Manager

In a similar Big Brother-esque vein is ON Technology's Internet Manager. This product tracks how the Internet is being used. It captures all your network IP traffic and stores it in a relational database, including what Net application is being used (Web, Gopher, FTP and so on), which sites are being visited and, more importantly, what's being downloaded. This information can then be squirted out in the shape of reports or graphs. Sites can also be blocked centrally.

The program runs on a Windows NT server, and ON Technology claims it's invisible to the user when loaded.

URL www.on.com/imtrial.html

Download size 7,275,045 bytes

Platform Windows NT 3.51 or higher

Price Demo version free

The best thing about the Web is it's full of free stuff. Get your modem at the ready for this month's selection of the finest downloads.

save the style sheets to a file or automatically add them to HTML pages.

Media Design In Progress, the company behind the editor, also makes the Stylizer, a product which applies Cascading Style Sheets to older browsers that don't support the standard.

URL <http://interaction.in-progress.com/components/style>

Download size 1Mb

Platform Macintosh

Price Free

Net Toob Stream 3.2

The new version of Net Toob is well worth downloading. It's one of the best multimedia players on the market. The player can handle MPEG, QuickTime, Video for Windows, WAV, MIDI and SND files. The plug-in will work with both Internet Explorer and Navigator browsers.



URL www.duplexx.com

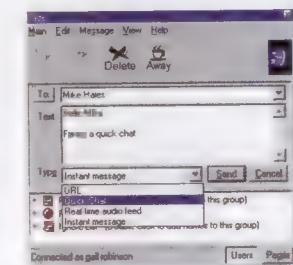
Download size 1.25Mb

Platform Windows 3.x/95/NT

Price Free

iPage

iPage is handy little applet that tells you when one of your mates or colleagues is online so you can have a chat. As well as having text-based chat, you can also transfer URLs, Web pages and audio via iPage. Below the menu bar is the text box where you type in your chat and under this is a list of which friends are currently online. You can set up your own chat groups or leave a little message explaining that you're away from your desk at the moment.



URL www.ichat.com

Download size 2.05Mb

Platform Windows 95/NT/Power PC

Price Free



Creating a website
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If your company needs a website, you need to choose a service that gives you more than just space.

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With on-line registration, you have instant access and can use our free design tools to create your first web presence within an hour. More complex sites are a doddle with free features like SSL, e-mail forwarding and Private User Groups. Or if you prefer, we'll introduce you to leading web designers.

And you can count on us to invest in new features like our BT MarketPoint service to make your website a webshop. To get your website up straightaway, visit www.btwebworld.com.

Or simply call us.

BT WebWorld
Freephone 0800 515 585
www.btwebworld.com



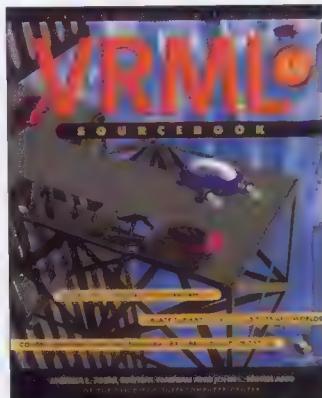
Books

Whether you want to surf VRML worlds or add a 3D environment to your Web site you'll need to know more about the mysterious world of Virtual Reality Markup Language. **Dave Howell** reviews four of the best VRML guide books on the market

The VRML Sourcebook 2nd edition

As you create your own 3D world, *The VRML Sourcebook* promises to guide you from first principles through to advanced features. The authors are all researchers at the San Diego Supercomputer Center, and are experts in the black art of VRML coding.

The book is task-oriented. You'll get your hands dirty from page one. The chapters are littered with tips from the authors which makes programming easier. However, what is missing is a look at the hardware you need to get the best



from these worlds. You'll also have to find a VR plug-in, such as VR Scout, for your browser, and configure it before you start to build your new world.

The VRML Sourcebook is a good roadmap for the virtual 3D environment. The authors' own Web site lists the latest up-to-date example worlds and VRML software; and the John Wiley site lists all the examples used in the book, plus the latest changes to the VRML Specification. The *Sourcebook* is very much a starting point. A book to be dipped into to answer your everyday questions about VRML. Its clear non-technical approach makes it a best buy for the budding 3D builder.

★★★

The VRML Sourcebook 2nd Edition

by Andrea L. Ames, David R. Nadeau and John L. Moreland.

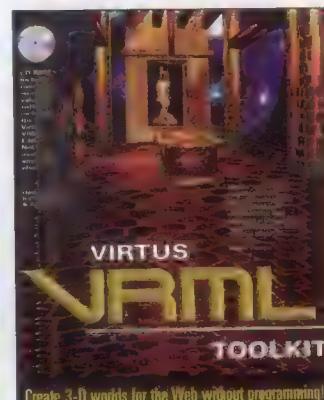
Publisher: John Wiley & Sons

Price: £34.95

ISBN: 0-471-16507-7

Virtus VRML Toolkit

Right now VRML is in its infancy. Today's desktop PCs don't have the raw processing power to create and interpret these environments. However, Virtus has taken today's technology and produced a suite of programs that allows anyone to create a three-dimensional world of their own, and put it on the Net with the least possible programming



knowledge. In fact, you don't need any programming knowledge, you create the environment using a drag-and-drop interface.

The *Virtus VRML Toolkit* is definitely more than a user manual for the software on the accompanying CD. The first third of the book looks closely at the whole field of VRML, its background, and virtual worlds in general; even taking in a discussion of bandwidth and the technical limitations of today's delivery systems.

Overall, this is an excellent introduction to the field of virtual world design. If you're building a Web site of your own, and would like to include 3D elements in it, you'll find all the tools you need here. Highly recommended.

★★★

Virtus VRML Toolkit

by David Smith, Richard Boyd and Alan Scott

Publisher: Hayden Books (Prentice Hall)

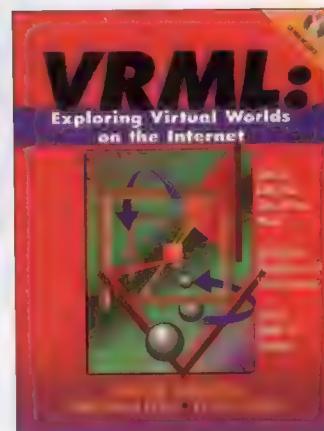
Price: £37.51

ISBN: 1-56830-247-9

VRML: Exploring Virtual Worlds on the Internet

As a general introduction to VRML on the Net, this book stands up well. However, you don't get much in the way of detailed, step-by-step tutorials on designing and publishing your own VRML worlds. The authors have picked one of many VRML browsers available – in this case WorldView v1.0 – and you get a detailed user manual as well as a quick reference guide to the browser.

One of the most interesting areas covered by the book, and one that has been largely overlooked by



the VRML press, is its use to enhance Internet Relay Chat (IRC). Email is what a lot of people use the Net for, but a close second is IRC. VRML Chat is a natural progression of this.

As a general introduction to VRML on the Internet this book is impressive. The accompanying CD includes WorldView and there are complete instructions on how to set the program up and use it to surf VRML Web sites. If you aim to build your own world then you should look elsewhere.

★★★

VRML: Exploring Virtual Worlds on the Internet

by Walter Goralski, Matthew Poli and Peter Vogel

Publisher: Prentice Hall

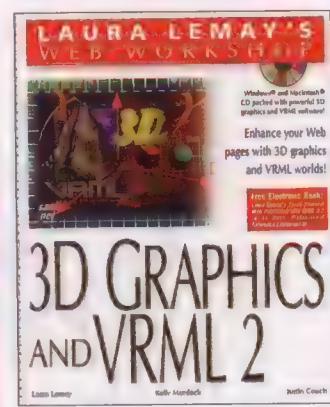
Price: £26.95

ISBN: 0-13-486960-5

3D Graphics and VRML 2

The Laura Lemay Web Workshop series of books are well known and widely used and with good reason. Here she presents an overview of 3D and VRML coding, and how you can use these techniques on your own Web pages.

The VRML element of the text takes up the second half of the book, with 3D rendering and



animation chapters getting you started. Chapters – as usual – are presented in a workshop format, with plenty of examples to work through.

The book only skims the surface of this vast subject. The packages it touches on cover the whole range of design, from ray-tracing to advanced VRML environment construction. The sophistication of some of the packages is reflected in their high retail prices.

To add something a little different to your Web pages, VRML and 3D rendering and animation are a sure bet. If you're new to this field then this book will show you what's possible. The accompanying CD contains a whole range of software demos which will help you make a decision on what VRML software to buy.

★★★

3D Graphics and VRML 2

By Laura Lemay, Kelly Murdock and Justin Couch

Publisher: Sams.net (Prentice Hall)

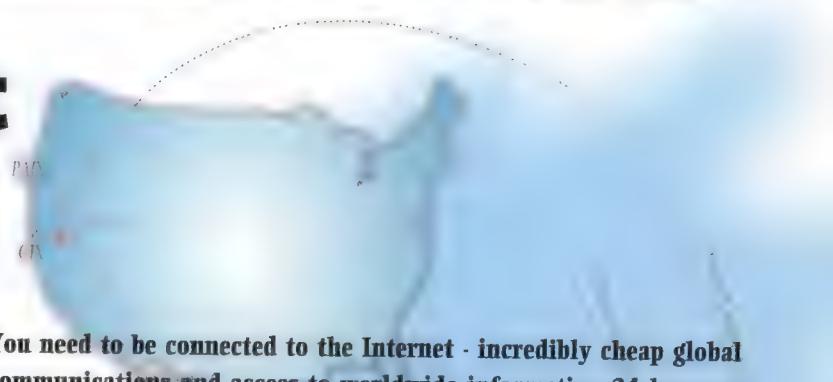
Price: £37.50

ISBN: 1-575210143-2



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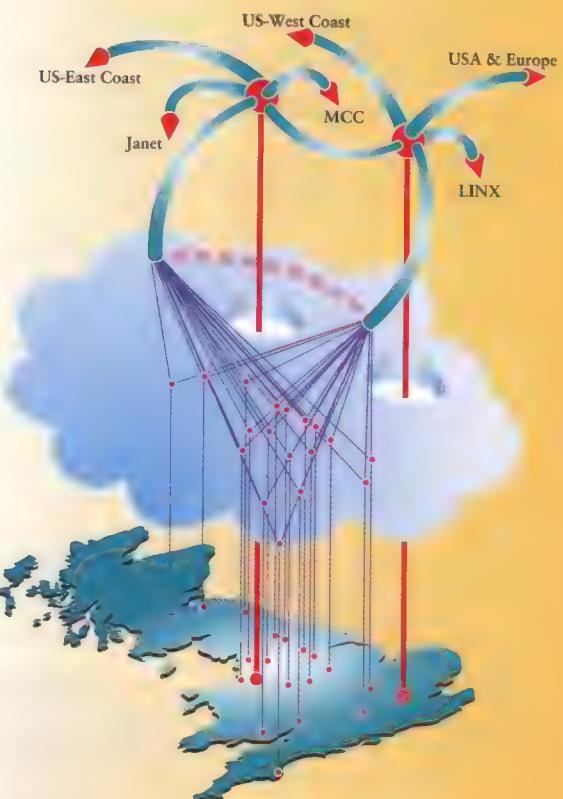
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site survey

Time Machine

Designers: Flextech New Media

URL: www.timemachine.co.uk

Development time: Eight months

Development costs: Undisclosed

You've got your popcorn and jumbo soft drink. You're ready for the opening credits of the Saturday film. Tune in, turn on – and freak out.

You find it's already started, moved forward in the schedules to accommodate cricket highlights.

Your week-old TV guide could never have known, but the latest online TV listings guide would have kept you informed. There was a time when the *Radio Times* and the *TV Times* were a fixture of every household. Deregulation sorted out this cosy duopoly and there are now more listing magazines than you can shake a remote control at. The proliferation of satellite and cable channels means viewers increasingly need an intuitive programme finder rather than simple listings, something that suggests what you might want to watch and when and where to watch it. That's why Flextech has upgraded its TV listings guide, Time Machine.

What is Flextech?

Flextech New Media has recently been raising eyebrows in the Web design industry, after scooping prizes at the Cable and Satellite Industry Awards. Its Trouble site (www.trouble.co.uk) won most original Web site and its Bravo site (www.bravo.co.uk) was runner up. Flextech has also recently announced a joint venture with the BBC allowing it to develop new channels and to look at ways of integrating television with the Net.

Because Flextech provides its own TV content, it has outsourced all the site's editorial comment in

the name of impartiality. But being associated with Auntie's media empire does bring its benefits. "We have the backing to be able to put together a site such as Time Machine without needing to seek an immediate return," comments site editor, Colin Donald.

Time Machine's first public showing was at The European Cable Communications Show at Olympia last October. Colin Donald recalls the event. "We took a prototype of the site along and ran it locally. The industry showed an immediate interest." Ashley Highfield, vice president of IT and New Media at Flextech Television, agrees. "The site was initially intended to showcase our new-media skills. Since then, it has developed into a major product in its own right, thanks to the strategic importance

of electronic programme guides for digital television."

Flextech moved onto version two, which has a scrolling, dial-shaped front-end so the user can select more specific television preferences to build up a personal portfolio. Version two also includes video clips.

Time Machine version three is much sleeker. Users choose from a menu of programme types including Film, Entertainment and Kids, and choose specific times and dates. It then displays a list of suitable programmes, which channel they're broadcast on and the start times. The site now shows a better appreciation of what fits within a 14-inch monitor screen. "The video now appears in a separate window, full-screen size," says Richard Wray, special projects manager at Flextech. The clips, up to several minutes long, are broadcast in VDOLive format, in one of two video quality options: 160x120 pixels at 15 frames per second, or,

for users with more bandwidth, 240x176 at 24 frames per second. At the moment, the movies are little more than promo videos, "but the opportunity is already there for entertainment-on-demand," maintains Donald.

What's on the site

The front-end is the site's sexy bit, the area to draw customers in and keep them coming back. Flextech envisages a number of template themes based around the current design. "They could become like Windows wallpaper. We could have a sports one, a travel one and even a flowery Laura Ashley version," says Donald. In this way a company could sponsor a particular look, so conceivably you could have your telly schedule brought to you in the style of a *Star Trek* phaser.

The main issues facing the creative team were how to make an intuitive interface which users could understand within minutes. "It presented major design challenges every time we overhauled it," recalls Michael Atherton, art director at Flextech. "Having users navigate through menu after menu



The colourful Java based interface masks the extensive TV listings



is confusing. This means trying to keep all the elements – buttons, labels and areas for displaying the search results – on one screen. But that requires a lot of thought and prototyping to pack the elements onto the screen without making it too cluttered.”

The technology

Flextech has written the site entirely in Java, insisting on a need for a robust, stable environment capable of upgrades with little more than minor coding tweaks. "The Java programming really pushes the

Day	Time	Channel	Title	Description/Time
0	Saturday 06:00	Bravo	Close	
1	Saturday 20:00	Bravo	The New Twilight Zone	A biological accident causes blindness in the population
2	Saturday 20:20	Bravo	The New Twilight Zone	An enraged, jealous husband goes to a bar where he meets a stranger with remarkable powers
3	Saturday 21:00	Bravo	Mutronics	A CIA agent races against time to rid the world of evil Zonoids before they take over. However...
4	Saturday 22:00	Bravo	Horror: Tower of Evil	Brutalistic British slasher movie in which visitors to the remote Skye Island are savagely...
5	Saturday 01:00	Bravo	Starsky and Hutch	Posing as film stuntmen, Starsky and Hutch investigate a series of fatal "accidents" and uncover...
6	Saturday 02:00	Bravo	Tour of Duty	Pt Marcus Taylor is captured by the North Vietnamese army
7	Saturday 05:00	Bravo	The New Twilight Zone	A shy woman becomes involved with a man who can turn himself into a cat
8	Saturday 06:30	Bravo	The New Twilight Zone	A woman, obsessed with death, attends strangers' funerals
9	Saturday 09:00	Bravo	Redemption: Virgin Witch	Saucy British shudder about two young models' encounter with the lesbian head of an agency

language to its limits. It's one of the first real uses of the Java Database Client technology. And it combines sophisticated animation with streaming video. Using Symantec's Visual Café Pro has taken weeks off the programming time," says Wray.

Time Machine also has a percentage bar, a gadget that tells you how much of your fave programme you've missed. It remains to be seen how many people enjoy being told they've just missed the first ten minutes of *The X-Files*.

What the future holds

The team at Flextech would be the first to point out the site is still very much in its infancy. "We're looking at entertainment on demand, we have ideas for RealAudio and there's even talk of creating our own Net radio station," says Donald.

Flextech also has plans to incorporate a number of the features used in Yearling's TV guide (www.yearling.com), and a keyword search. Asked about Video

Plus+, Donald muses, "Flextech has no plans *not* to include Video Plus+ in the future". One thing that's lacking is biting editorial of the kind available at Yearling.com

The competition says...

The *Radio Times* is only one of a number of BBC brands set to go online. Nick Brett, publisher of the *Radio Times*, freely admits, "If we listed every terrestrial, cable and satellite channel, the *Radio Times* would become a phone directory."

We made a conscious decision to make the paper product more selective with a core basket of 30 channels. It will then be our aim for the site to offer the most comprehensive listing."

The *Radio Times* followed the work done by Yearling with interest. But, says Brett, "Yearling and Time Machine are not household brands. Nine out of ten people have heard of us. We're a famous brand and can cross promote." *Paul Bennett*

Title	URL	Channels	Search categories	Editorial comment	Radio listings	Video Plus+	Weekly view	Features
Time Machine	www.timemachine.co.uk	45	12	Yes	No	Not yet	Yes	Grid option
Yearling	www.yearling.com	49	35	Yes	No	Yes	Yes	Keyword search
BBC*	www.bbc.co.uk	4	None	Yes	BBC Radio	No	No	Search engine
PA TV & Satellite Guide	www.salomon.demon.co.uk/tv.htm	46	None	Yes	Yes	No	Yes	Clock
Sky Television	www.sky.co.uk/tvguide/index.htm	11	None	Yes	No	No	Yes	Last week listed
Events Online	www.eventsonline.co.uk/open/tv/	7	None	Yes	No	No	Yes	No Channel 5
Ultimate TV	www.ultimatetv.com/tv/uk/cable.html	56	None	No	No	No	No	List only

*The BBC Radio Times online site hadn't been launched at the time of writing.

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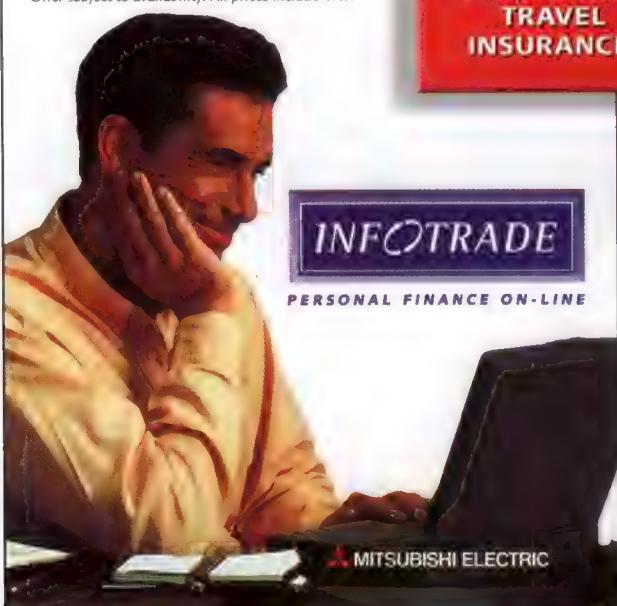
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News, updates and the bizarre

The latest news on site development plus our pick of all that's utterly useless on the Web

Internet design and production agency Knowhaus has developed its award-winning Greenpeace site yet further. Visitors can now work their way around a virtual reality Rainbow Warrior. Built to celebrate



Greenpeace's 25th anniversary, the model is built to scale, from the ship's original plans, using VRML 2.

What is unique is the way it acts as an interface to Greenpeace's multimedia database. As you navigate around the ship you can explore maritime objects like the dolphin masthead and Greenpeace dinghies.

www.greenpeace.org/vrmlrw

Those crazy Irn Bru cats from Scotland have souped up their site with more wacky characters. Drop in to see Sid the Bruer, Dr Grau and the Irn-Aliens. Twittering pigeons, deranged coach drivers and much, much more that has absolutely nothing to do with a brownish, sweetish, stickyish beverage. If this is your cup of fizzy drink, you can download various screensavers and desktop themes.

www.irn-bru.co.uk

Looking to re-market its 'ding-dong, Avon calling' image, cosmetics giant Avon has launched its online beauty catalogue. After a brief flirtation with AOL this second online foray is



part of the company's overall strategy to upgrade and attract a new generation of make-up buying customers.

Buying through avon.com is simple but shoppers can also phone, mail or fax in their orders. Those preferring the more traditional Avon shopping

experience can click to request a home visit from a local sales representative.

www.avon.com

After Yellow Pages, Business Pages and Talking Pages, you now have Gardening Pages with Yell's Greenfingers site. The site has tips on how to plan your garden, how to deal with different soil types and a selection of top gardening supplies shopping tips.

So for bumper crops of really soft fruit, soak the roots well as the fruit begins to plump up.

www.greenfingers.co.uk



Order your take-aways over the Internet with Café Bon Appétit. Provide them with your postcode and they'll provide you with your sarnie.

www.bon-appetit.co.uk

On track for completion next year, London Underground has kept its



customers apprised of the latest developments to the Jubilee Line Extension via the Web site of the same name. The site now has a hipper look with glossy illustrations and animations.

www.jle.lut.co.uk

Those nice people at Littlewoods are giving you yet another chance to win wads of cash with their online pools coupon. You can pay with any credit or debit card, using secure transactions via an encoded data transmission system that both Barclays Bank and BT already use. You can also take part in a Spot-the-Ball competition... "Over £150,000 in cash to be won every week."

Blimy.

www.littlewoods-pools.co.uk

On a wet weekend in March, the Royal & Ancient Golf Club of St. Andrews translated the complete rules of golf into seven languages. Multilingual visitors to its site will find information on details of its championships, including past champions, future venues and conditions of entry. During the Open, this part of the site will provide a link with Royal Troon for up-to-the-minute scoring and player interviews.

www.RandA.org

Universal Studios Online and ichat have launched a live Hollywood chat programme designed to be a one-stop site for hobnobbing with



leading Hollywood celebs, writers and directors. You can even download transcripts of moderated chats you might have missed.

<http://vid2.mca.com:4080/>

Why did they do that?

Following its recent mention in *The Guardian*, we thought we'd check out the site of *Driveways*, the public-access television show hosted by John Cunningham. "Driveways of the Rich & Famous gleefully and literally takes the celebrity-lifestyle genre down to the asphalt," says *The Wall Street Journal*, and we fully agree.

www.driveways.com

After our torque-testing teddy bear, we now present mutant Marshmallow Bunnies. To determine their weaknesses and strengths, Volunteer Bunnies and Control Bunnies risk their lives to take part in arduous tests. You can choose from among eight tests, including delights such as laser exposure endurance, the hot-tub test and the radiation tolerance test.

www.pcola.gulf.net/~irving/bunnies/



Many thanks to Marty for his awesome collection of human noises. Yet another truly inspired use of the Web, it kept the *Internet Magazine* team amused for longer than was strictly necessary.

www.lunaticlounge.com/stupidhumanoises/

If ever a site said to you, why? WHY? this is the one... You want to see utterly insane – possibly even certifiably insane – animated GIFs? Click on the lost god pictured here, and weep.

www.geocities.com/SoHo/Lofts/4456/

With a name like Dog Diaper it has to be American. With a concept like fitting your canine friend with a pair of orange underpants it has to be American. With a patent and a prototype tested on several breeds of dogs, it has to be American. You'll even find a video demonstration showing dogs wearing the prototype diaper.

www.dog-diaper.com/



Radio 1

The Radio 1 site gets a new Web design company and runs into a few deadline problems

 So no more ginger, eh? The new-look Radio 1 site has been revamped, retuned and redesigned in the new branded red, white and black. And, more importantly, with Mark Radcliffe taking over the breakfast slot, it is now purged of any references to Chris Evans.

"It was time for a lick of paint," says Jason Wilburn, Radio 1's Web site manager. "The site reflects the schedule changes and our new advertising campaign, incorporating a lot more colour and activity."

According to Wilburn, the brief was to make a site which was an information resource, one that's interactive, makes people feel like they're in the building and adds value to the on-air content.

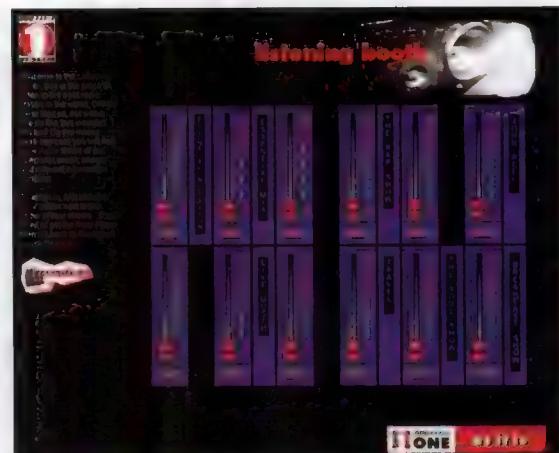
Radio 1 therefore dropped Sunbather, the company which

designed the original site, in favour of Hoskins Associates, a firm that specialises in designing business sites. As part of the new regime, specialist music shows have been allocated their own pages and now let you download RealAudio streams. Sound good? Well, yes, apart from the need for an array of browser-busting plug-ins, which even when installed have the habit of not always working properly.

The site is now more interactive, using Shockwave and streamed audio for radio programmes and webcasts, says Paul Hoskins, MD of Hoskins Associates. "It's not essential to have the plug-ins, but Shockwave will be bundled with all the new browsers," he says.

The whole project cost £35,000 and took just four weeks to complete, as Radio 1 had done a lot of groundwork in-house. But Radio 1 faced a major timing problem. The popular general election site ran off the same server, slowing the site down drastically and leaving Radio 1 with technical hitches to iron out.

"I felt the old site was hard to navigate and lacked a centralised



You need a browser-busting array of plug-ins for this site

audio point," says Wilburn. Hence the site's most useful feature: the tuner, a 12Kb Shockwave file that acts like a custom bookmark for the site, and encourages you to return.

The biggest problem for Hoskins was the split nature of the project. "We were doing the graphic design, but the BBC was putting the HTML together," explains Hoskins. "We produced full-screen graphics in Freehand and Photoshop and converted them to animated GIFs, and then the BBC had to reconstruct them as HTML tables."

Hoskins went on to add, "The BBC gave us a really tight brief to maintain a strong corporate identity, albeit quite quirky. In the future

we'd like to get in there earlier and put more into the conceptual rather than production design."

The BBC plans a Web studiocam, (currently under development) which DJs Pete Tong and Mark Goodier have welcomed. It also plans festival tie-ins, demo-ing new bands in webcasts and generating more Net-only content. "It's been rather chaotic after the launch. We've let content slip a little," admits Wilburn.

David Atkinson
www.bbc.co.uk/radio1

Design 
Technology 
Navigation 

Office World

Take the grief out of the tedious business of ordering office stationery

Why is it that stationery delivered to your office disappears in the dead of night? Office World, retailer of stationery, office supplies and furniture, is aiming to make the arduous task of ordering envelopes and the like less time consuming via its online superstore.

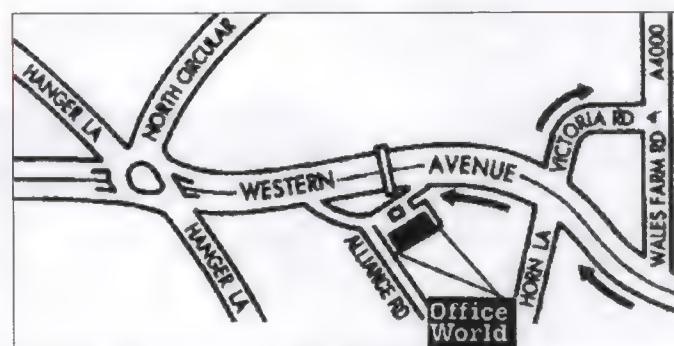
Office World already had an online presence in the shape of a store in CompuServe's shopping centre. "This was a text-based shop, which was limiting," recalls Neil Greenway, Office World's Internet project manager, "but we now have a Web site which does everything we need."

Office World has a core range of around 5,000 products, 3,000 of which are available from the site. From the site you can also access the Office World small business survey, published quarterly, along

with local maps directing you to your nearest superstore. Office World will even deliver your order free, the next working day, as long as it's placed before 4pm and exceeds £50.

Lengthy discussion about the site's development has paid off. "We spent a long time finding a suitable ISP, and investigating and understanding the issues relating to their Internet connections. Some ISP services are very slow at peak times, and so had we used them, our site would have been much slower. As it is, we get many positive comments about the speed of the site," explains Greenway.

He admits that one of the site's biggest problems stems from the way the company data is structured. "A user on the site can take the Product Groups option, which allows them to drill down to the product they're after. These use internal Group, Sub-Group and Sub-Sub-Group product groupings, and although these groupings are correct for internal use, they need to



Use the online map to locate your nearest Office World and just pop in

be reviewed so they work better for a Web shopper." At the moment though, you're scuppered if you forget that 020545 is the product code for a Perforex roller damper.

The site wouldn't work without a secure online payment system. Office World currently uses Secure Sockets Layer (SSL) encryption. "When other technologies, such as SET, become established, we'll look into the possibility of using those," acknowledges Greenway.

Office World will primarily measure the site's success by the value of orders received, but because visitors can also use the site to ask for an Office World catalogue, it will also use the

number of requests for catalogues as a further measure of its success. The problem is the brochures take an interminable two weeks to deliver. Instead, why don't you use the online map to locate your nearest superstore, then pop in, pick one up from a counter and pop out again - easy!

The site takes a lot of the hassle out of ordering stationery. And you can even earn American Airlines air miles with every purchase.

Paul Bennett
www.office-world.co.uk

Design 
Technology 
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RAC Online

Its Web site is a key part of the RAC's huge corporate repositioning strategy

The RAC is part and parcel of our motoring heritage, harking back to bygone days when motorway congestion, road rage and reclaim-the-streets demonstrations had never been dreamt of.

But the RAC is undergoing a substantial change with a relaunch, redesign and repositioning of its corporate image. The new look, much vaunted in a nationwide advertising campaign, looks a trifle dull on a 48-sheet poster site, but on a 12-inch monitor, the Web site exudes a quality feel and a clean sophistication. Web design firm CHB/i, which also hosts the site, worked closely with the RAC's own agency. "We wanted to make sure there was a synergy between the new look and the new attitude. To that end, we've incorporated bits of the television ads onto the Web

site," says Cherry Wellesley, account manager at CHB/i.

The RAC faces something of a dilemma. On the one hand, the car is still seen as the transport of choice. On the other, you have quite definite ecological murmurings and the inescapable fact that the average speed for urban travel is a paltry 10mph. The site, though, moves much quicker than this, currently unimpeded by roadworks or tonnes of traffic clogging up its server. Very much a content-driven site, it looks at motoring maintenance, car health checks, and where to stay when you reach your destination, which you

can decide using the RAC accommodation planner (currently boasting details of 1,300 selected hotels). It also has category headings focusing on the RAC-sponsored motor sports and events around the country and a brief glimpse into the motoring future.

The RAC also seems genuinely keen on getting some feedback from the site and has set up 'Your Voice', an area to discuss the latest motoring gossip. The discussion forum was an important part of the site development. "The RAC wanted to encourage a dialogue for their users" says Wellesley.



It's a nice site. It's a very nice site.

The latest development on the site is live traffic information. The aim is to have traffic updates every ten minutes. You can also buy RAC products and membership in a move to compensate for the lack of RAC high-street presence. "A lot of items are bought after 7pm at night, so the site acts as a round-the-clock RAC storefront," says Wellesley. As *Internet Magazine* went to press, 25 memberships had been sold online.

Signing on is a painless process. Fill in your details and an email responds to your inbox. You're now a member. Imagine the situation. Subscription lapsed, Ford Cortina on its last legs, fan belt out on the M1... but you have a laptop and a mobile in your briefcase. Stage one: log in to the site; get out the trusted plastic; and within minutes you're an RAC member. Stage two: phone the RAC and get them to fix your car – or tow you away. Simple.

Paul Bennett
www.rac.co.uk

Design
Technology
Navigation

★★★
★★★
★★★★★

FASHION

Lee Jeans

The jeans that boast they built America are now online with a dynamic, denim domain

Denim isn't just a fabric: it's a statement; an attitude; and a lifestyle. Check out the Lee Jeans site and the virtual worlds of music, fashion and love are at your fingertips. Derek Woodgate, Lee's European marketing director, believes the site reflects their understanding of their target audience. "They are fashion followers who are into music and film, and they're definitely interested in the opposite sex."

The pages are fashionably designed on a cool indigo backdrop with typefaces reminiscent of *Blah, Blah, Blah* magazine and content that deals with almost everything but jeans. The site has a competition based on Lee's saucy Kama Sutra advert and links to weird and

obscure home pages, reflecting the sexy, urban image of the jeans. It also has details of Lee-sponsored events such as the MTV Music Awards, the Roskilde Festival and the European Spoken Word Festival. You can explore America from the comfort of cosy Europe. Amazingly enough, the site even has a section with useful information on the styles and cuts of jeans available.

Lee Jeans hopes that coolness will rub off. The site has links to respected music papers like *NME* and *Rolling Stone* and considers itself to be one of the few sites to stream RealAudio, in this case samples of up-and-coming bands. By trying to represent a lifestyle rather than just flogging a pair of slacks, Lee is trying to break into the youth market hogged by Levi. The well-established levi.com site draws its content from current advertising campaigns, incorporating movies, screensavers and interactive games. Oliver Gutierrez, Lee's site editor, explains Lee's approach. "Lee wants to stamp its

own identity on the Net rather than just reflecting an advert."

The Lee site is still in its infancy, with plans to extend, develop and update it frequently as events warrant. Derek Woodgate is very forward-thinking and knows that the Internet is evolving rapidly. "We have to learn how to use it better, make it more interactive," he muses. "In the future there could even be a Lee virtual community. In

the meantime our aim is to get customers from the site and into the shops." From the punter's point of view, the site has its charms, but if all you want is a pair of jeans you're better off going to your local shop.

Katherine Harvey
www.leejeans-world.com

Design
Technology
Navigation

★★★
★★★
★★★★★



The target audience: those who follow fashion and have an interest in the opposite sex

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Talk TV Online

A TV station devoted to chat makes its silent online debut

'The site of the show of the station of the media merger' – the Talk TV Web site is the ultimate brand extension.

When Granada TV and LWT got together to create satellite and cable programming for the Granada Sky Broadcasting channel, one of GSB's first creations was Talk TV. With only four hours live programming daily, and most of this of the in-studio talking-head variety, Talk TV relies heavily on pre-recorded US soaps and chat shows for its content. Even its UK content, based around the *Paul Ross Show*, *Showbiz UK* and *SportsTalk*, is mostly derivative, with print, radio and terrestrial TV journalists doubling as guests.

Given this unpromising content and lack of resources, the person (yes, the one person) responsible for the site has excelled. Using animated GIFs and CGI scripts, the site is lively. It has five main areas: programmes; presenters; chat; vote; and listings. Although the programmes and listings are little more than extended PR puff, the chat area lets viewers talk to each other, and to participating guests, about the subject matter of any UK-based show. More appealingly, the chat messages can be created using a variety of fonts and colours. The presenters section is, not surprisingly, full of images and biogs of grade-C celebrities.

Talk TV has a full-time presenter, or 'Web site wonder' as she's billed, who reads incoming emails to guests on the *Paul Ross Show*. The vote section lets viewers take part in shows by voting on the issue of the

presenters


Jerry Hall guest-presented *Showbiz UK* for a glamorous two weeks in March 1997.

The leggy *Terminator* beauty wowed the Talk TV team as she breezed into the studio like an out-of-tune, ultra-vibrant celeb such as *Chippendales* footie star *David Hasselhoff*, couture fashion designer *Valentino*, *One Thousand and One Nights* bluesman *Eric Clapton*...



Everyone knows Jerry Hall, but what about the other 'celebrities'?

day. Polls proving that 72 per cent of viewers find Princess Di dull may not be shocking, but Talk TV offers viewers more involvement. It undoubtedly presages how digital TV and the Net will merge, allowing broadband broadcast and narrowband interaction. But until two-way cable and satellite programming with email are the norm, the paucity of content is evident.

Impressively, this site was created on a shoestring. With a full-time staff of one who – incredibly – has had nothing but a crash course in HTML, the site went up in early April. By dropping its existing site creators, the company saved itself a

five-figure sum and simply brought in a scanner, a copy of Photoshop and some rented Web space. This and the tenacity of a Web novice has resulted in a credible site. Apart from a few hiccups with Navigator 3.0 fonts and some outside help with CGI and Perl scripting, it's all been created in-house for peanuts. This may explain the initial lack of audio – a bit of a let-down for a site with 'talk' in its title.

Mike Bracken
www.talktv.co.uk



Design
Technology
Navigation

Scream

FILM

Another film, another film site... but this one's special

In cyberspace, no one can hear you scream. At least when you're online, you'd think there's not much chance of getting murdered. Now, thanks to those cheeky Web monkeys at Foresight New Media, the days of safe, secure browsing may well be drawing to a close...

The release of Wes Craven's movie, *Scream*, is accompanied by an obligatory tie-in site. This one, though, aims to be different.

"What's pretty cool about this site," says Kathleen O'Donnell, account director at Foresight, "is that it's almost completely based on original artwork, original ideas and original writing." So, eschewing the standard press shots and celebrity biogs so eagerly slapped into HTML by other designers, the *Scream* site "is more like a complement to the film, which reflects its attitude and tone."

"Rather than concentrate on all the technology," says Foresight's account director, Tiema Otadaferua (who, although her name would suggest otherwise, is not fictional), "we wanted to develop the other side of the site – the fun side."

The site was created for Buena Vista International UK, for which Foresight has worked several times, designing the official *101 Dalmatians* pages, for example, as well as the award-winning *Toy Story* site. One thing that stands out about Foresight's newest creation is its enthusiasm. Just as the film acted as a knowing wink towards those all too used to the horror genre, the site seems to know its movie clichés, too ("...don't answer the door... don't answer the phone... don't go back into the house... don't have sex... don't scream...").

Accessing the site for the first time can be quite daunting. You're told to "stalk or be stalked", and then included in what turns out to be a huge murder hunt. A bit like *Cluedo*, but without any dice tossing. "Once you've entered the game, you won't get away," says O'Donnell, in a way that would reduce small children to tears.

To help you in your somewhat forced investigations, you're granted near-unlimited access to police files, and can accuse the townspeople of multiple murder at your convenience. Apart from the Hunt the Killer game, you're also invited to take part in a quiz to test

your horror flick knowledge and win prizes, and you get to download movie clips and audio files.

It's heartening to see something which could so easily have trod a weary bog-standard path – and been clicked away in an instant by bored film buffs – try for something so different. Could this be a turning point in the shady world of corporate marketing and faceless

G-men? Now that really is scary...
Danny Wallace
www.screamuk.com



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Technology
Navigation

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HumanSearch

Online search time is money – let HumanSearch run up its phone bill on your behalf!

Using a search engine can be a hit and miss affair. You type in your keyword, and – hey, Presto! – you get hundreds of irrelevant Web sites to trawl through! And every minute spent online adds to your phone bill. With the HumanSearch Search Engine you sit back while someone else does the work for you.

HumanSearch is exactly what it says it is – a bunch of flesh and blood human beings searching the Web for the information you need. The project was set up by five undergraduates from the University of Rhode Island who wanted to make the Internet "a bit easier for the average user".

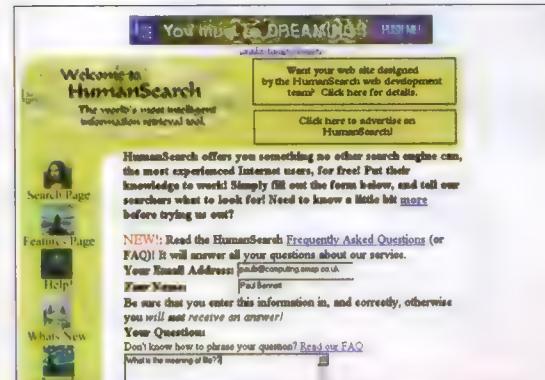
"We hope to change the face of Internet searching. By opening a

gateway for inexperienced Internet users to seek assistance from our staff, we can accommodate the recent burst of Net populace over the past year," says Clay Johnson, project leader.

The service, which has been in development for over a year, is free, and extremely easy to use. Besides the search facility, the site hosts a chat room, a message board and a virtual library, though to access the latter you'll need client software.

The design of the site is simple and effective, with the same navigation bar available on all pages. Each page is illustrated by a Famous Work of Art. Amusingly, the Help page is represented by Munch's *The Scream*, though the search page's connection with the *Mona Lisa* is a little harder to understand.

To carry out a search, you simply fill in the form on the search page, including your email address for a reply. The advantage of dealing with real human beings is that, unlike a database, a person can understand



your question and your reasons for asking it, and this knowledge can be used to target the search more precisely.

The disadvantage is that the search can take two business days to complete, which may seem odd to those used to the Web culture of instant feedback. In practice, the service is much faster – even at the weekend. I submitted six sample queries. All six had been acknowledged, via email, within the hour, and two more 24 hours later, again via email.

The search results were comprehensive, but by no means exhaustive. The human touch was definitely present – in each case, the

personality of the searcher came through. This could be a drawback, though, as one nit-pickingly precise searcher still managed to misquote two of the relevant URLs.

Still, HumanSearch is a great idea, and a useful tool, given free, in the spirit of the Internet 'gift economy'. All they want in return is feedback, and your bookmark file, so they can build on their own resources. Sounds like a bargain.

Elaine Hernen

[www.humansearch.w1.com
/humansearch/cgi-bin/Limit.txt](http://www.humansearch.w1.com/humansearch/cgi-bin/Limit.txt)

★★★
★★★
★★★★

United Airlines

United Airlines takes a flyer on a Web site but you can't book online unless you're in the US

What we all want from an airline's Web site is the ability to book tickets online – no faffing about with endless phone calls or queuing in travel agents. You can book your tickets online at the United Airlines site, but only if you're in the States. Georgia Hall, director at Web design firm Zinc, told us that United Airlines seats will be bookable online from the UK within the next three months.

The site is the work of Zinc, a spin-off from direct marketing agency Evans Hunt Scott. Zinc has been concentrating on working with existing Evans Hunt Scott clients, including the likes of Tesco, Microsoft – and United Airlines. One of Zinc's first Web projects, the UA site has allowed Zinc to grow. It now employs ten full-time staff members and around 20 regular freelancers. The project has been in the pipeline

for the last six months, and it's taken two months of intensive work to get the site up and running.

Inevitably, the site reflects the look and feel of United Airlines' US site. Indeed, if you need to look up flight details you're directed through to the US site (www.ual.com). It caters for three types of visitors – punters, travel agents and members of the Mileage Plus plan.

In future, Zinc aims also to cater for travel agents via an intranet.

You'll find some nice touches here. Recognising that visitors need a reason to subscribe, United Airlines offers you the chance to win a free UA calculator as an incentive to fill in those registration forms. Other competitions are strewn throughout the site, and you can even download a UA screensaver.



If you had already flown to the US, you could book your return flight via the Web...

It might not sound like much – but it'll keep people coming back.

As well as details of flights and information on UA's mileage-plus plan, the site also has a paltry handful of links to other travel-related sites. Zinc could have worked a little bit harder here – after all, the Web sports thousands of travel sites. The US-to-UK dictionary could also do with a bit of work, though it does let you add your own entries.

Point4 – Zinc's sister company and the firm behind the Electronic Telegraph's registration database – hosts the site in the UK on a Nexus Server.

Until online flight booking makes an appearance, I probably wouldn't go back to this site. Navigation is good and clear and the design is sensible, if a bit dull, but the site just doesn't have enough in the way of stimulating or unique content to keep you coming back.

Gail Robinson
www.unitedairlines.co.uk

★★★
★★★
★★★★

Web Art Gallery

Try to imagine an unusual art gallery – one that sells limited-edition Hockneys and Blakes over the Web

G'wan, I dare you. But it's happening: photographer John Fenton set up Gallery Online on Valentine's Day, 1996, with three other people – and they're doing just that.

Managing director Fenton and his colleagues made up their minds that Gallery Online would sell only "the very, very top artists" and then eventually use this success as a springboard for less well-known artists, with each big name choosing someone "they feel is destined for greatness," says Fenton. He's also planning a linked site of top-end photography, one of computer-generated art, and an online arts review.

Fenton and his colleagues deliberately use low-res imagery on the site "so it's not downloadable." Their first exhibition was Peter Blake; Gallery Online sold *Madonna on Venice Beach*, and Blake's Alphabet Set.

The linked science fiction, fantasy and horror site, Fantasia Online (www.fantasiaonline.com/), includes such well-known illustrators as Les Edwards, Chris Moore and Jim Burns. For this site plans are afoot for a different virtual walk-through for each section, including a Tardis for the Dr Who bit.

Gallery Online doesn't appear to have any serious competition in the UK, though New York has a couple of online galleries. Says Fenton, "There are plenty of archives and museums, and people in California who'll defecate on a piece of cardboard and sell it for \$40 grand over

the Web, but no other organised Web galleries selling 'serious' art". Boasting awards from *New Scientist*, *Europe Online* and *SFX* magazine, the site gets between 120,000 and 140,000 hits a month, while Fantasia Online gets around half that.

On its first day, Gallery Online sold four prints to Norway. According to Fenton, it's "not making vast amounts of money, but we're getting some money back." For a site that's been online for less than two years to be recouping even some of its set-up costs is pretty impressive.

The gallery was produced totally in-house, at a cost of around £25,000, by Fenton and four others under the name Cydonia Systems. Because Gallery Online has unique visuals, companies such as Microsoft and Adobe are supporting the gallery with software. The exhibitions change about once a month, though all past exhibitions stay on the site. Watch out for J K Potter and Mark Salwowski on Fantasia Online, and for Gallery Online's forthcoming exhibit of Royal Academicians, which will coincide with the Royal Academy's Summer Exhibition.

Fenton says you've gotta be quick: "You can't give people too much time to think about luxury goods." His logic seems to be working. The gallery has thus far had buyers in Japan, Africa, Germany and the US.

Like most companies that sell over the Web, Gallery Online's biggest problem is getting their money, quickly, before their luxury-good-buying customer changes his mind. The gallery does not operate a policy of sale-or-return!

Liz Bailey
www.galleryonline.com/

Design
Technology
Navigation

★★★
★★★★★
★★★★★

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Gap Kids

A slick bit of marketing from Gap. Pull the kids in early and they'll stick with Gap for the rest of their lives...

This is a simple site with a simple premise: give the Gap generation parents a chance to imagine their children in the full range of kiddie clothes and at the same time draw in the up-and-coming generation of children, to whom the Net is nothing new. They may even imagine themselves in the same clothes, if they haven't leapt over to the grown-up Gap site.

The site has been designed in-house by Gap's marketing department, and it shows that The Gap is serious – at least in a monetary sense – about developing an online presence.

The site has only three sections, but it contains a full set of links to the rest of the Gap empire. The whole site's interactivity is based around Macromedia Shockwave, and it's both quick to load and fun to look at.

The first section concentrates on dressing your gakid. Work your way through the GapKids catalogue, picking out the perfect outfit for gapboy or gapgirl. You can choose the item and then play with the colours; reality kicks in with the price tag.

In the second section you'll find information and some educational elements. These 14 pages take the visitor through a potted history of Dutch painter Piet Mondrian, who

is credited with changing the face of art, architecture, fashion and furniture. Having worked through the art lesson, you're then invited to create your own art in the same style, again using Shockwave.

In the third section, you can enter a competition to win a windcheater. Unfortunately, you can only do so if you live in the US.

According to Marka Hansen, senior vice president of international merchandising, the Web will reflect the GapKids store experience. "Every time the stores change – with new colours, styles and window displays – the site will change too," she says. If this is taken to its logical conclusion, it could make for some serious content upheaval.

The site is well-planned and sophisticated with an uncomplicated front end hiding a wealth of information and work underneath.

However, the site works in much the same way that TV advertising for toys at Christmas does. The kid sees something he wants and then runs off to his parents saying how desperately they want that new outfit.

This is a slick piece of marketing wrapped up in some good design with attractive interactivity – much like GapKids stores themselves. You'll tut tut at how cynical it seems, but you'll go in and say "Hey, this stuff is really nice. I could just see little Johnny in that."

Mike Hales

www.gapkids.com

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Progressive Networks' RealVideo

Mike Hales takes a look at how RealVideo is being put to good use on the Web

Before you leap excitedly into the world of RealVideo you'll need to install Progressive Network's RealPlayer. Version 4.0 is currently in beta. You can get beta 1 for PowerPC-based Macs, and beta 2 is available for Windows 95 and NT-based PCs.

If you own a copy of the older PlayerPlus (see *Internet Magazine* 28, March 97, page 84), then when you try to connect to a RealVideo file your player will automatically take you to a download site for RealPlayer and offer you the new version (downloading from the UK site is the quickest).

Having suitably equipped yourself and your computer you can click away merrily. RealPlayer launches and keeps you informed of where you're connecting to, what speed you're connecting at and when to expect the file to start playing.

One of the helpful things about RealPlayer is that if the connection breaks down, the program automatically reconnects from where you left off.

If you're surfing via a modem the player will adapt to give the best performance possible over your connection. You can adjust the screen size so you get a larger screen size, but be warned you're likely to get wildly pixelated images.

Now, don't go mad expecting wild, cathartic, all-singing, all-dancing multimedia. RealVideo isn't quite up to that yet, but what you do get is the best audio/video combination available over the Net. Better still, you have lots of material to choose from. TimeCast offers a video guide (www.timecast.com/videoguide.html) which lists more than 150 RealVideo sites.

The home user will find many a temptation there, with a heap of record companies offering tasters from their top artists. Meanwhile, more serious users will find news and business sites.

So what sites are really worth visiting? Follow me, gentle reader.

Music – loads of it. You can catch up with U2 as the band sets off on its Pop Mart tour (www.secondcoming.com/u2/index2.html). One of the office favourites, Daft Punk, has a video on offer from Progressive Networks' European office at <http://europe.real.com/rvlaunch/showcase/d1218.ram>.

But it's not all pop-tastic. Educational material is also available (www.thaifamily.org/info/videos/taz.ram). You'll also find Thai singers with a rather

rather lovely walkthrough of the company's stand at InterOp. Check out www.timecast.com/video/business/bay.ram.

You'll also find some rather more serious uses of the technology, with such luminaries as the US's first lady of verse Maya Angelou (<http://ramhurt.real.com/cgi-bin/ramhurt.cgi?ram=maya56.ram>) and former

from, with one of my favourites, Tim Allen, running through his fur coat sketch (www.cummingsvideo.com/home/comedy/standup.htm) and a very young-looking Jay Leno, now institutionalised on the Tonight Show. And of course you'll find a fair sprinkling of The Simpsons to boot (www.newsinternet.com/video/thesimp2.rmm).

As you'd expect, given the hundreds of Web sites devoted to its stars, *The X-Files* are in the RealVideo world as well. Clips are not from the present fourth series, but it's still a goodie (www.newsinternet.com/video/thex-f13.rmm).

The movie studios have no intention of missing out, so you'll find numerous clips from all the major players. MGM even goes so



RealVideo brings you music, film, stand-up comedy... and, of course, *The X-Files*

enthusiastic audience in attendance! (See www.leck.com/cds/video288.ram.)

The business user won't find too much in the way of UK-specific content, although ITN's site has an excellent selection of election memorabilia (www.itnelection.co.uk/moments/when/when.htm). Sadly the Beeb offers no RealVideo clips of its numerous shows.

Unsurprisingly, you'll find a lot of US-centric news and TV files, and the occasional show report. For anyone who missed it, Bay Networks has kindly created a

Soviet mover and shaker Mikhail Gorbachev (<http://ramhurt.real.com/cgi-bin/ramhurt.cgi?ram=gorby28.ram>) both on

show at the C-Span site. Film and TV make up the majority of RealVideo examples. The Alternative Entertainment Network has a great selection to choose

far as to offer its roaring lion logo (www.mgn.com/realvideo.html).

Finally, if you want to create RealVideo content, you'll find a full set of guidelines in both HTML and Adobe Acrobat formats at www.real.com/products/realvideo/index.html. *Mike Hales*

webprofess

Reader's questions are answered by our panel of experts. Send your query to faq@internet.emap.com



Steve Andrews, from Web design company SmartNet, the company behind sites for Condé Nast, answers this month's Web design queries.



Michael Chissick is the head of Internet and IT law at Field Fisher Waterhouse, a city, a 50 partner city of London law firm. He'll be answering your legal problems.



Roger Gann is a freelance computer journalist and specialises in the technical side of the Net from the user's perspective.



Gail Robinson is the editor of *Internet Magazine*. She answers those tricky questions that nobody else wants to sort out.



Mike Hales is the managing editor of *Internet Magazine* and he's an Apple fanatic. Readers should address their Macintosh problems to him.



Mike Bracken is *Internet Magazine's* deputy editor. He'll be answering any questions you have on products and new Internet developments.

Expert help

Advice on using HTML tags

Q We understand that soon it's going to be necessary to add META tags for the PICs rating of Web pages. If you don't, certain browsers or minder programs will block access to your site.

We also understand it's becoming more important to use the tag <META HTTP-EQUIV="Content-Type" CONTENT="text/html; charset=... especially if you're producing a page in a different language.

Have you got some advice on using these tags, and can you tell me if it matters where they're placed in relation to other META tags?

Tony Whittaker
tony@soon.org.uk

A Steve Andrews replies:

The inclusion of META tags for the PICs ratings are not compulsory in Netscape Communicator or Internet Explorer 3. When you're including META tags specifically for PICs, these should always be contained within the <HEAD> </HEAD> code.

The best advice we can give on META tags for the PICs rating is to refer you to the info on pics from www.rsac.org and www.w3.org/pub/WWW/PICS/.

I need a community ISP

Q I want to find an Internet provider with a community emphasis. I'd like them to provide only limited Web access, have community-oriented bulletin boards, newsgroups and conferencing along side community specific information.

Can you help?
Stuart
stuartm@home.cam.net.uk

A Gail Robinson replies:

The best place to start is with the Internet Services Providers Consortium's (ISPC) site at www.ispc.com. The ISPC was set up by a batch of smaller service

I'd also take a look at UK Online's service. It offers UK-specific information and news, along with parental control. LineOne, BT and News International's joint venture, is also worth a whirl. It carries UK-specific content,

including information from the *The Sunday Times*, *The Sun* and *The News of the World*.

AOL
(0800) 279 1234
www.uk.aol.com

UK Online
(01749) 333 333
www.ukonline.co.uk

LineOne
(0345) 777 464
www.LineOne.net

CompuServe
(0800) 289 378
www.compuserve.com



LineOne carries a good selection of UK-specific content

providers with the aim of offering local content. On the site you'll see a list of member companies, so you can check if there's one in your area.

I'd also recommend you investigate both AOL and CompuServe. Both have chat rooms and other forums devoted to specific special interest areas. Perhaps you could set up a forum devoted to your locality and invite members to join? Both online services also support parental control features.

I want to cut my phone bills

Q My daughter has recently moved to Australia, and my wife and I seem to be spending about an hour a week on the

Top reader's tip wins a Motorola 56K modem

Just thought I'd drop you a line to let you know that I've come across the same problem with using frames as a reader in the May issue of *Internet Magazine*. I too had my page split into two frames, on one side were links and on the other the page itself. When I press a link it works fine but only in the half of the page where the links are and not in the whole page. When I tried to solve the problem by creating a targeted full page frame I had lots of problems with frames nesting inside each other.

I've been told the problem is down to a bug in HTML. If you want to bring up a link into a full page which replaces your frames (for example when linking to another site) you have to include the expression TARGET="top"

in the link syntax, for example:
Link Name



telephone to her. It strikes me the Internet could be a way of saving lots of money on phone bills. How do I go about setting up an Internet voice link between our home and my daughter's place in Australia? Can you advise me on who or what you would recommend:

- as the network provider at both ends
- as the PC and PC equipment supplier and what it should be
- as the PC software supplier
- type of connection

I'd hope that the conversations would be equivalent in quality to the ones on the telephone.
Alan Bailey
alan.bailey@natwestuk.co.uk

A Gail Robinson replies:

Alan, first the bad news: you'll probably be disappointed with the quality of any audio communication you achieve over the Internet. The theory is great – you can make transatlantic calls for the cost of a local call – but the reality is rather different. You'll find there's a time lag and your daughter could well sound like she's talking through a kettle.

The more bandwidth you have the better the sound quality, so the faster your connection the better

the quality of the call. If this hasn't put you off, here's a run-down of the equipment you'll need.

- Firstly you'll need a fairly powerful PC – aim for a Pentium with at least 16Mb of memory.
- You'll also need a fast modem, preferably 33.6Kbps or 56Kbps.
- Next you'll need a sound card that allows you and the person at the other end to speak at the same time. This is known as full duplex communication.



VocalTec's Internet Phone also has video features

- You'll also need a microphone and a pair of speakers.

All of this should set you back around £1,000. Then you'll need the Internet phone software. Thankfully, you can get demo versions of most of the software for free by downloading it from the Net.

VocalTec's Internet Phone is a good option although the sound quality can be a bit patchy (www.vocaltec.com). InSoft's CoolTalk is also worth investigating (www.insoft.com). The program is easy

This has certainly solved the problem for me. You can check it out at <http://ds.dial.pipex.com/town/terrace/q043/>

Steve Metcalfe
steve.metcalfe@dial.pipex.com

A Steve Andrews replies: We've tried to replicate the problem and have come to the conclusion that either there is a bug in HTML or that the problem is caused by trying to open a frameset within itself.

Thanks for that tip, Steve. This month we've got a fabulous Motorola 56K modem as a prize for the best reader's tip. The Motorola VoiceSURFR is a voice/data and fax modem which supports the new K56 technology which allows you to download files at speeds of up to 56Kbps (uncompressed).

With the help of this little beauty you can set up your PC with voicemail, use it as an answering machine and as a full duplex speakerphone.



sits in the background and pops up when someone tries to contact you. Quarterdeck's WebTalk is also good.

So how do you go about contacting your daughter? First of all she has to be running the same software as you and then she has to be online when you ring her. So you'll have to co-ordinate this in some way, although some Internet phone systems have answering machines so you could always leave a message.

Finally, if your Net phone needs a static IP address (one permanently assigned to you) then you might have to consider changing providers, as not all ISPs offer this.

I can't play back my video files

Q I've been trying in vain to save video files from the Webscape site and playing them via Microsoft's Netshow Player program. I can view the video clips live on the Internet with this program but, when I save the files, I can't get the video clips to run from the disk. The NetShow program works with .ASF files or live ASF streams, but the saved files appear to be .ASX files. Is there an easy explanation for this?

D Walmsley
walmsley@mcmill.com

A Roger Gann replies:

I think you may be barking up the wrong tree. NetShow Player is a viewer designed to playback live streamed video delivered in the ActiveX Streaming Format (ASF). As far as I can make out, the Player is just that: a player, not a recorder. An ASX file is merely a pointer to the location of the ASF source. An ASX file is an ActiveX Stream Redirector and provides the information the NetShow Player needs to connect to a server. An ASX file is a one line text file which looks like this:

`ASF protocol://servername/virtualdir/filename.asf`

Can you help me set up my site?

Q Our company is looking at setting up a Web site and as a one man department I'm respon-

sible for all things IT. I don't want to outsource this project and I hope you can give me a bit of advice. I have a dial-up account with Enterprise and a virtual mailbox.

I want to use Microsoft FrontPage 97 to produce a relatively basic site. Enterprise tells me it won't currently enable FrontPage extensions on their Unix server due to security issues. Enterprise also says that 'Enterprise don't provide any pre-written CGI programs or scripts, but you'll have access to use either your own scripts or ones written by a third party.'

I want to use email-to-form within our site and possibly a feedback form. My questions are:

- 1) Are Enterprise's reservations about FrontPage extensions justified?
- 2) Should the ISP provide the CGI scripts?
- 3) In the absence of provider created CGI programs or scripts, what can I do to enable feedback?
- 4) How do you get an email address to pop up a mail form when a user is browsing?

Simon White
sdw@donaldson-timber.co.uk

A Steve Andrews replies:

There are alleged security considerations with FrontPage, which result in extra administration costs. This means a resource is allocated by the ISP, and not all ISPs are prepared to allocate that resource.

We spoke to Enterprise and they told us that Enterprise had set up FrontPage extensions on the main Web server back in December with a couple of clients. A couple of weeks later a client pointed out a potential security hole.

At about the same time, concern was also voiced about FrontPage within various Web server related mailing lists. The discussions came to no real conclusion and so the trial was postponed until Enterprise was happy with the security. There still seems to be no consensus on this matter but opinion seems to be moving in FrontPage's favour and so Enterprise is preparing to resume the trial soon.

There is a potential way around this problem. You could make your local PC a Web server, as a test



expert help

server. You could run FrontPage on that, and upload files and other changes to the live server at Enterprise.

In the UK, most providers will provide one or two scripts at most. However if you were to host your site on a US-based server you'd find they bundle several scripts as standard. There's no obligation on the service provider to provide scripts however.

Finally, there's a well known form to email script available from Matt's script archive at www.worldwidemart.com/scripts/

And to pop up an email window, simply use the following mailto tag: click here

Who can host my site?

Q Could you please advise me on how to go about finding Web space providers in Europe?
Kourosh Khakpour
nby4@dial.pipex.com



EUnet has an impressive number of links worldwide

A Gail Robinson replies: For international hosting you should check out the following companies. EU-Net (www.eunet.com) has links with most of the European countries including France and Germany and many more countries worldwide.

PSINet has a new deal where sites can be mirrored on two geographically diverse Web servers at no extra charge. This service also has a load balancing feature whereby, at times of high demand, the servers will share requests. The PSINet deal also supports CGI scripting and FTP access. Check them out at www.uk.psi.com

Finally it's also worth giving CompuServe a whirl at www.compuserve.co.uk and BT Internet at www.bt.co.uk

Too many email addresses

Q I have three email addresses with BT Internet and find it inconvenient to have to change the settings in the mail options box every time I want to check for mail. Can you help?

P.R.Goodchild@btinternet.com

A Roger Gann replies: This is a very real limitation – most email clients expect users to have single mail accounts. The reality is somewhat different. But here's a solution you might want to try. Recently Microsoft released the Outlook Internet Enhancement Patch (IMEP). You can download beta two of this product from www.microsoft.com/outlook/documents/imep.htm. It's not too big, at 512Kb.

The update includes support for multiple POP3 accounts in the same user profile. Other useful tweaks include improved support for storing messages on POP3

have global chat at the moment but it has no DCC.

Gavin

kdavey@iol.ie

A Mike Hales replies:

Direct Client Connections (DCC) is a secure form of communication, as the messages sent via DCC don't go through the IRC network.

The technology is available in the rather lovely IRCLE. Version 3.0 of the software is in beta, but is stable enough for me to recommend you give it a try. Pop along to www.xs4all.nl/~ircle/, where you can download the software. If you want to know a bit more about DCC, have a look at www.irchelp.org/irchelp/ircprimer.html#DCC. This site is an excellent source of background information.

is the \Windows\System directory. This file is a key part of the TCP/IP network stack and is crucial to a successful Internet connection.

If you have only one Internet dialler program, this arrangement is unlikely to cause you grief. However, you might want to install a second Internet access package – perhaps you subscribe to CompuServe, say. CompuServe has its own, very different and highly incompatible winsock file and, yes, by default it'll be copied in to the \Windows\System directory, thus overwriting the original winsock.dll. The result? Chaos! That's what the original CompuServe Internet Dialler used to do.

These days CompuServe is much better behaved. It now copies its Winsock file in to a local directory where it can be located by the dialler without having to look down the DOS PATH to find it. And that's how you have multiple winsock files on a PC peacefully co-existing with each other – you place the winsock in a location where it can only be seen by the dialler it's intended for. In my experience, it makes for a much simpler life if you actively avoid multiple diallers on a PC and use just one dialler to access several ISPs.

The way forward for Windows CE

Q I'm trying to find out, before I buy a new palmtop, if there's any possibility of the Pocket Internet Explorer in Windows CE ever supporting ActiveX or Java? If so, when is it likely to be available?

Martin Williamson
martinwi@attachmate.com

A Gail Robinson replies:

A spokesperson for Microsoft was cagey about updates to Windows CE. But we do know that ActiveX and Java are both crucial technologies for Microsoft so it would be strange if support was not built into the next version of the product.

Apparently we can expect a more detailed announcement on the way forward for CE in the next month. Keep an eye on Microsoft's Web site (www.microsoft.com) for details.

Do links need to be copyrighted?

Q Could you tell me if there are any legal issue re putting links to other people's pages in your own Web page, do you need to use a copyright message? I ask because in the North of Scotland, there was a case between two newspapers where the one had a link to the other's newspaper Web site.

Peter Hodgetts

Peter.hodgetts@warwick-ha.wmid

A Michael Chissick replies:

The case you're referring to deals with two newspapers on the Shetland Isles. *The Shetland Times* has an online section which contains a homepage complete with an advert, followed by a second page which lists the news headlines. *The Shetland News* linked direct to the news headlines, bypassing the front page with the ad.

The judge set an interim injunction which ruled that *The Shetland News* could not link to *The Shetland Times*. We're still waiting for a final judgement.

The safest thing you can do is get consent from the webmaster of the site you want to link to. Then you should link to the homepage.

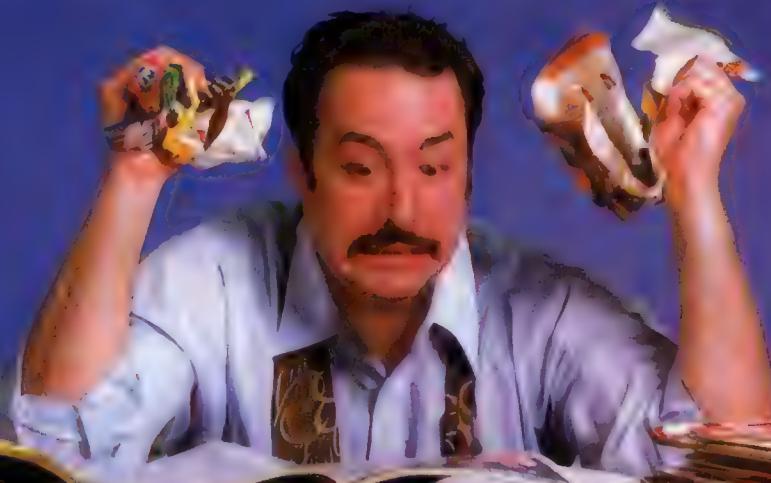
Good Mac IRC software

Q Could you tell me where I can download some good IRC software with DCC capability? I'm using a Mac running System 7.5.1

A Roger Gann replies:

There's no real mystery here. On any Windows PC there can only be one winsock.dll file visible at any one time and, by default, its location

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How to create the perfect feedback form

Selling books or CDs, offering a subscription to an online newspaper... to do all of these things you need forms on your Web site. **Steve Shipside** explains how to use them, and points out some spectacular dos and don'ts.

Forms. Unloved and unlovely, they're forever popping up in life, a physical embodiment of everything that is tedious and pedestrian about administration. Tax, health, passports, banking – just how many times have you had to fill out your own name, address and date of birth? On the Net they always seem to stand between you and something that interests you.

At best they're a pain, at worst a paranoia-inducing turn-off, effectively

acting as a no-entry sign to a site. The only good thing you can say about forms on the Web is that at least you never have to fill them out in triplicate – although with some spectacularly poor designs, you come depressingly close.

But without forms you get no feedback beyond vague estimations of hits and page impressions. The data submitted on forms is often effectively paying for the presence of the site, and as such is a necessary evil.

If you're managing your own site it's only natural to want to know as much as possible about your visitors, and if you're managing a commercial site its very existence may depend on the feedback you can give to your clients. But then you already know that, because nobody reads this far into an article on Web forms for the sheer devilry of it.

Making forms fun – well, very nearly

It would be nice to say that forms don't have to be dull, but that would be a tad strong. Let's just say that forms don't have to be so dull. A lot is made of the need for interactivity in Web design, and yet forms, often the most interactive elements of a Web page, are commonly reviled.

It doesn't have to be that way. Forms should be a welcome opportunity for users to specify searches, select from alternatives and write back with comments and contributions. Increasingly, forms should let you make money directly from a site by conducting transactions – selecting goods or services and submitting credit-card details by return.

Don't scare people off with nasty catches

A good form is itself a user interface, but in so many cases, the design of

You get to this registration form via a link that says, "Yes, of course I trust you" www.starshiptitanic.com/

Starlight Travel

THANK YOU. YOUR THIRST IS NOT MISPLACED.

First, we would like to know your NAME

And your EMAIL ADDRESS

And finally, your preferred species of TERRESTRIAL FROG:

Thank you for your help.

good forms is of secondary importance. The prime consideration is just to stop scaring people off. A couple of years ago I was offered a free account on the Microsoft Network (MSN). Not being one to look a gift horse in the mouth I was happy to take the Microsoft shilling and sign up, until I came to the log-on form.

The catch was that the form wasn't complete without my credit-card number, even though I wasn't expected to pay. The form had no provision for cases like mine, and I had precisely no intention of giving out my credit-card number any more than I would hand over my card to a stranger who said they weren't going to use it, they just wanted to hold it for a while. I've still never signed.

And keep it short and very snappy

Similarly, I've turned away from countless sites where the opening screen asked me to fill in and submit long and tiring forms. It's one of the features of the Web that the information you want is often to be found in more than one place.

SUBSCRIBE TO THE WALL STREET JOURNAL INTERACTIVE EDITION.

Simply fill out the form below and click Submit when you're through.

Step 1

Note: Your browser must support authentication to use this service. If you've successfully visited other sites that require a user name and password, you should have no problem here.

First Name:
 Last Name:
 Company Name:
 Street Address:
 City:
 State/Province USA/Canada:
 Other:
 Zip/Postal Code:
 Country:
 Other:
 Phone Number:

Provide your e-mail address. Tip:

• Include your e-mail user name, the @ sign and [servicename.com.john@ibm.com, john@ibm.org, hfd84@prodigy.com].

E-mail Address:

Choose a User Name. You'll need this each time you sign on to the Internet. It should be no more than 15 characters and must be unique. Important: When you type it, so make a note if you enter in upper and lower case User Name:

Naturally enough, therefore, when confronted with a request to fill in their life story and inside leg measurement, many people will simply try to look elsewhere for the same information.

So how do I do that then?

Whether your form uses pick lists, radio buttons or text entry fields it works by assigning a NAME tag to each of the input elements. As soon as the user presses the send button to submit the form, that data is bundled off to the server, where it's normally handled by a CGI (Common Gateway Interface) program.

Gateway programs basically take care of handling requests, and returning the desired information, whatever that may be, which is why they're commonly used for FORM requests. Their real benefit is that they are executable programs external to the browser, so they can exchange information between different set-ups, even different operating systems. CGI is just a convention between HTTP servers so that the server can handle the gateway program, which can be written in just about anything from C++ to Perl. Or, of course, you can adopt the *Blue Peter* approach and use one that someone else did earlier from one of many online libraries.

Increasingly popular is the use of JavaScript, which gives you precise control over collecting data as well as the option of taking the pressure off the server by using local applets to verify it. This can be really useful in cases where you're collecting a lot of different alphanumeric data types, especially if the users are on several different platforms.

Alternatively you can turn to off-the-shelf packages, many of which come with handy form creation templates. Whatever you choose, remember to think about what users are going to use to get to your site. Tesco's excellent site, for example, blots its copy books by using Microsoft transaction software that can't display the form without the presence of ActiveX or certain VBX files. If you log on via a browser like AOL, you simply can't see the form, let alone fill it in.

Finally, if your head is spinning at the thought of all this, then perhaps you don't need CGI capability. If your target audience is small, or the data is very simple then you could just have it emailed to you by using the MAILTO command in HTML.

THE WALL STREET JOURNAL INTERACTIVE EDITION

Monday, April 14, 1997

Raising the Bar on Pay

With even weak chief executive officers pocketing gigantic gains last year... due partly to the long bull market in stocks... boards have begun to ask the once unthinkable question about executive pay: How rich is too rich?

How Less Can Be More

It sometimes pays to stop being chief executive officer. Increasingly, aging business leaders are easing into retirement by relinquishing the CEO spot while hanging on as the well-paid chairman.

When CEOs Moonlight

ORACLE FINANCIAL APPLICATIONS

the solution is here. Just better business.

Shopper Registration

Welcome to the Tesco Internet Superstore sign-up page. To make it easier to participate in the exciting Tesco Internet Superstore community we ask that you take a moment to tell us a bit about yourself.

We'll keep all this information to ourselves (naturally) but helps us serve you better. We'll know how to keep you informed about our events and programs and we'll be able to keep track of what you order and where to ship it.

You must read our [Terms and Conditions of Use](#) before you register as the act of registering means that you agree to them. Then, just fill out the form below and click the "Register" button.

If you have any questions we may have [answered them here](#).

Please note - if you are not using an up-to-date Web browser that supports ActiveX and VBScript, clicking on the Register button will do nothing.

Title:
 First Name:
 Surname:

E-Mail:
 Home Telephone:
 Work Telephone:

TESCO

You can't display the form on the Tesco site unless you have the appropriate ActiveX files
www.tesco.co.uk/

they've got any good-looking sisters/brothers.

"I think before anything else you should be asking yourself why you've got a form in the first place," opines Mark Curtis, director of CHB/ Interactive Media, creators of the RAC site (rac.co.uk) and the Carlsberg site (carlsberg.co.uk).

"The danger of the Net at the moment is that everyone is very excited about collecting customer information, but they don't really know what they want it for. Which means that in the

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NewScientist

Is this the future of food?

Cyberia: Gen Information Knowledge on Web

end it's like the Douglas Adams meaning of life – we know the answer is 42, we just don't know what the question is yet.

"I hear clients saying they want to collect loads of data, because they can, but they don't know why. There must be more databases in the UK of client information that has never been used than there are Web servers collecting it today."

"Everyone thinks they'll do things with that data in the future, but if you're going to make it hard work for users, you'd better know why."

Keep it brief but perfectly formed

In practice, then, ask for too much and you'll probably get nothing, so the first thing to remember is the Mick Jagger Rule of form design. The Jagger Rule, of course, is that you can't always get what you want (but if you try sometime, you just might find you get what you need).

Put another way, cut your demands down to the bone. Consider what the most important information is (age, gender, occupation, hobbies or interests, email address, homepage,

I enclose a cheque/postal order made payable to 'New Scientist'
 Please invoice me/my organisation

Please debit my
 Mastercard Visa American Express
[Please tick/select as appropriate]

Card No:

Expiry date:

Signature:

Title: Mr Ms Mrs Miss Dr
 Surname:
 Initials:
 Company:

The first New Scientist screen you come to is almost easier to fill out than it is to ignore
<https://secure.ipc.co.uk/newsscientist/subs/subscribe.html>

The Stern site sends you an email alarm when your favourite star is on telly
www.stern.de/



then use different background colours, or text colour – anything to make it clear that there's a difference between them. People are lazy, and tend to surf more with the mouse than the keyboard, so if you can make the feedback into pick lists and radio buttons you're likely to get more answers (and fewer spelling mistakes).

Don't send forms back for corrections

If you're constrained by using somebody else's form factor, which can happen when developing for the likes of AOL, then make it clear where a user can get away with completing a field just by hitting the space bar within it. Whatever you do, don't commit the cardinal sin of returning an incomplete form, asking for it to be completed, but only after losing all the information put in the first time.

It sounds obvious, but as you concentrate on, say, a CGI program that

verifies that a registration or credit-card number is right, make sure that it doesn't just present a new form if that number is wrong.

Keeping people's secrets for them

If you're asking for sensitive information, like card details, then make sure you tell the user what encryption system you're using, and include a help feature so that those who want to know more about it can find out. Even a couple of lines of explanation about how it works, and who developed it will work wonders when it comes to reassuring users, which in turn will increase the number of completed forms you receive.

Above all else make it clear to the user why they should waste their

valuable time filling in your form, rather than doing something more productive like watching paint dry, or sloping off down the pub.

"I would say there's a straight equation," explains Mark Curtis, "based on the perceived benefit of filling in the form. The higher the benefit, the longer you'll be prepared to work on it."

"If I say you have the opportunity to win a thousand pounds you'll put in more work than for an intangible promise like being given access to hidden parts of the Web site. Plus, if you're going to return a form that's incomplete, don't just say this isn't right, make sure you offer tips for what the user can do about it."

If the user suspects that the information is going to be used commercially, for marketing purposes, then he/she is naturally going to be suspicious as hell. Paper questionnaires usually explain what the data will be

Sample scripts

The National Center for Supercomputing Applications (www.ncsa.uiuc.edu) has a lot of sample CGI scripts.

See also:

<http://spider-man.cso.uiuc.edu/cgi-bin/>

The Common Gateway Interface
<http://hoohoo.ncsa.uiuc.edu/cgi-bin/>

Fill-Out Form Support

www.ncsa.uiuc.edu/SDG/Software/Mosaic/Forms/

Virtual Web

<http://www.virtual-web.com/>
 /support/help/guest.html

Selena Sol's Public Domain CGI Script Archive and Resource Library
<http://selena.mcp.com/Scripts/form.html>

Northwestern University Library
www.library.nwu.edu/resources/www/forms/

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Special offer
Free issue

If your form asks for credit-card details, it's best to specify how these'll be encrypted

stored for, and include the tick box option not to allow information to be used for direct mail shots. Web based forms can, and should, do the same. If your aim is nakedly profit-based, then you may need some extra reason for punters to cough up genuine info.

Cross my palm with information

The best by far is the good old fashioned bribe. Make it something physical, like a t-shirt, cuddly toy or fondue set that has to be delivered by post, and you're at least in with a chance that the name and address will be genuine.

If the bribe is the site itself, then say so – tell people that you're offering them unique information or entertainment for free, but that in return for your work you would like to know who they are. After all, people do pay for shareware, you know, not all of them, true, but enough.

"That was always our philosophy," comments Ben Rooney, the original editor of the Electronic Telegraph, "that you get it for free and the only cost of any kind was that little bit of information."

"What we needed was the demographic information for advertisers, and we never did anything more with that information, marketing wise, aside from sending out two electronic mail shots, which were about the Electronic Telegraph itself."

Relying on the honesty of strangers

The Telegraph's interest was largely demographic, but in order to satisfy advertisers it also had to establish which country people were logging on from. In order to do so, like most sites using forms, it had to rely on people being honest.

a custom page in the process) and an email alarm whenever your actor is going to be on the TV."

The clever part is that the initial request for data is so simple, and so enticing – just your favourite star, in return for which you get a service. From that point, however, the more the user enters, the more relevant the service becomes, so they return to the form and add more.

You can go back, for example, and add the times and days you watch television, your favourite things to watch (sport, film, et cetera) and/or your favourite station.

Giving as good as you get

"From our experience we know people watch TV in patterns – certain times, programmes or channels, so people

start to create a personal online profile. We get to improve the quality of service to the readers, and we get data on what interests them, which we keep anonymously.

"Advertisers are very interested, and follow what we do, and since we can provide that data to our customers

they are more ready to book."

Now that's when you really know you've succeeded; when your users voluntarily return to a form, over and over, to add more details.

Steve Shipside (ship@cix.compuLink.co.uk) is a freelance journalist who lives in Paris. He rides a red Moto Guzzi LeMans I.



"People were honest, we had a few M.Mouses, but to the best of our knowledge they gave the correct details," says Ben. "When we did it, back in 94 we got a lot of flack – we were working with the sales guys from Mosaic and they said you just can't do this, it's not how people expect to be treated but we stuck it out and got our information."

The fact that it was back in 94, and something of a novelty, at least for the British press, certainly worked in its favour. It's unlikely that a magazine doing the same thing now would get such a positive response without offering a little extra, like an email-back service, for example.

Giving something for nothing – almost

One of the most sophisticated forms around can be found on the site of the German magazine, *Stern*. The form registers you for *Stern*'s TV agent (www.stern.de/tv/).

Ulrich Hegge, director of *Stern*'s online service, explains. "What we wanted was an intelligent TV agent where you can type in the name of an actor you like, or a hobby, and get both the results on the Web (building

faxback

In this series we've covered the following topics:

1. Planning a site and basic HTML
2. Creating graphics for your site
3. How to do research on the Net
4. How to get traffic to your site
5. How to create a newsgroup
6. Making money from your site
7. How to make cash on the Web
8. Animating the Web
9. How to add frames to your site
10. Using tables on your site
11. Using Dynamic HTML

If you've missed any of these articles, they're available via our Faxback service; see page 141 for details.

simple

internet solutions



need not be primitive

It is said that "the bitter taste of poor quality lingers far longer than the sweet taste of low price". Yet you can now buy premium quality leased-line Internet connectivity from Britain's best core ISP for just £1,800 per quarter plus VAT, *inclusive of leased-line to your door*. Contact us now for friendly professional advice that will leave you smiling sweetly for years to come.

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Why host your own Web site?

Hosting your own Web site will give you total control over your company's Net presence. David Cartwright explains what equipment you need and how much money you're going to have shell out.

More and more companies are choosing to host their own Web sites rather than rely on an ISP or other commercial provider. The main reason for hosting a Web site in-house is it gives you control over the equipment, the Internet link and the content of your site. If you store the pages on an ISP's server you're seriously limited in what back-end processing you're allowed to do (service providers don't like people running scripts willy-nilly on their servers). What's more, the only comeback you have if the service drops below an acceptable standard is financial (for example, a penalty clause in the contract) and we all know that no amount of money can make up for lost business and goodwill.

Another benefit to hosting the site yourself is that you can integrate your existing systems into your Web development. For example, your AS/400-based product list could, through a small CGI script, suddenly become the basis for a Web-based

catalogue. The final advantage to the DIY approach is that you can use LAN protocols to interface the machines of those putting pages and data on the server directly into the server. This means that Windows 95 users could drag and drop pages onto the server's disks, for example.

Choosing the hardware

Many hardware companies would have you believe that you need brand new kit to host your site. In some cases this may be true, but there are a variety of factors to consider, as well as the hardware and software you'll need:

- How much back-end processing you need
- How much money you have to spend
- The speed of the link between you and the Internet
- How you want to integrate the Web server with your existing systems

A small installation will typically have a slowish (64Kbps or 128Kbps) link to the Internet, with relatively little back-end processing aside from the usual customer feedback forms.

Because of this it's common to see dusty old 486 PCs and 68030-based Macs emerging from cupboards to act as basic Web servers. Another common approach is to use the existing LAN server to serve Web pages as well. For example, Novell's Web Server bolts onto the side of a NetWare server, while Microsoft's Internet Information Server provides a similar set of

features to network managers who already use NT.

Larger organisations should look at buying a server specifically for the task of hosting the site. These machines are not prohibitively expensive. One of the sites I work on runs on a 200MHz Pentium Pro machine with 64Mb RAM and a 2Gb disk. This set up cost a shade over £2,000 including VAT. The machine is blindingly fast, and will cope with the needs of the site for at least 18 months, even with the SQL database back-end it houses alongside the Web services.

Almost everyone I've come across overspecifies their Web server. People imagine you need monster-size kit to cope with the Web. Actually, you don't, as in most cases it's the leased line that constrains your throughput anyway. One organisation I know recently spent a five-figure sum on a powerful Web server to host a site the popularity of which is relatively constant and which would have trouble pushing my Pentium Pro to its limits – an expensive but uncannily common mistake.

The real monster servers come into play when the load on the processor becomes too much for a single processor machine. This typically happens when the back-end processing (database integration in the main) takes over from the leased line as the bottleneck in the system. It's here that you get into multi-processor boxes (either Intel-based or a native Unix system such as a Sun).

The name of the game here isn't just speed, though; expandability is crucial. Web sites grow in popularity as time goes by; this means that you want to put in a system now which will keep

The Capital FM Web site: Sings the praises of internal hosting



you going for the near future, but which you know you can add to, to keep up with demand.

Choosing the software

The first thing you need is the Web server software. According to the Netcraft Web Server Survey for May 1997, the most popular Web package in the world is Apache, which runs under Unix. Second comes Microsoft's IIS, an NT-based system, with the Netscape family (both NT and Unix) coming a pretty distant third. There are, of course, dozens and dozens of Web packages, both commercial and shareware/freeware, each with its own band of loyal followers. However, the top three have 70 per cent of the market sewn up between them. For an exhaustive list of the various Web server packages, check out www.netcraft.co.uk/survey/servers.html.

The final component of the system is the stuff you're going to hang off the back of the server package, via CGI or an Application Programmer Interface (API). At its most fundamental this might be a simple customer enquiry

don't want to spend much money, and to use a Mac with WebSTAR server software and a FileMaker Pro database system simply because you understand Macs and don't want to fight with NT or Unix.

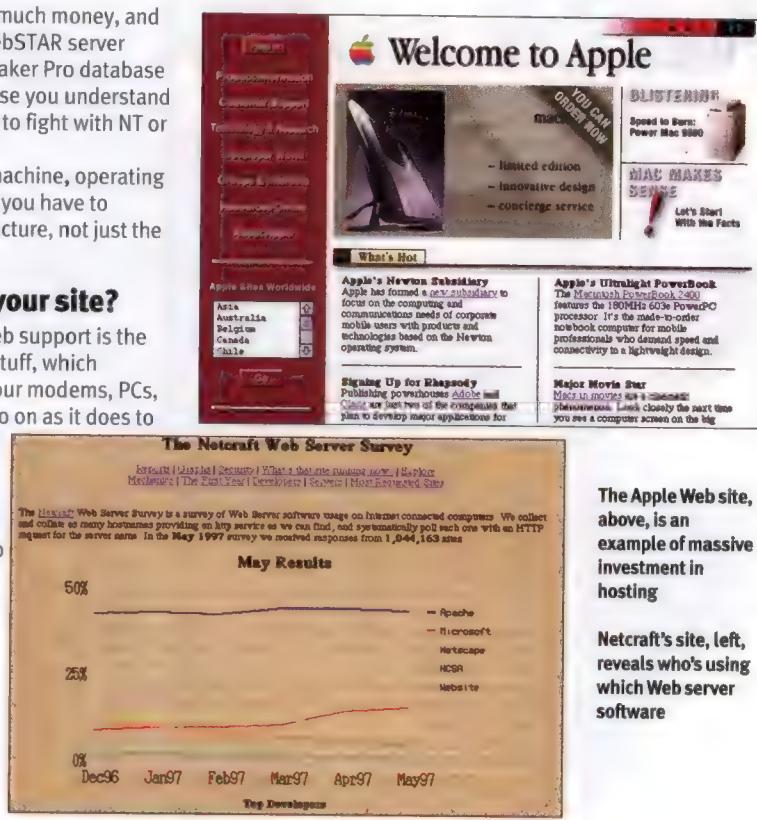
To buy the right machine, operating system and software you have to consider the whole picture, not just the components.

Who supports your site?

The first aspect of Web support is the standard IT support stuff, which applies as much to your modems, PCs, network cables and so on as it does to the Web server.

Whatever your hardware, operating system and Web software, someone has to fix it if it breaks.

In all but the biggest companies, this someone will be a member of the existing IT support group. Unless your Web division is



The Apple Web site, above, is an example of massive investment in hosting.

Netcraft's site, left, reveals who's using which Web server software



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Build a private corporate intranet.

Web-based networks are proving to be an exceptionally cost-effective way to distribute reports, track assets, provide access to diverse company databases, and update software applications throughout your enterprise. They can even enhance collaboration, at a fraction of the cost of groupware.



The Netra Server hardware from Sun lends itself to large scale hosting.

form, moving up through basic integration with, say, a price/product list, right up to the heavy tasks performed by systems like Infoseek – real-time queries on gigabytes, or even terabytes of data.

As the task becomes more intensive and specialised, the back-end system will be the driving force behind your choice of system. This may mean you end up buying a big Unix database server and interfacing it to a separate Web server over the network. This is handy, as it splits the choice of back-end system away from that of the Web machine. If you decide to use, say, Microsoft SQL Server as your back end, though, your choice of Web server will be driven by this and you'll almost certainly use an Intel box running NT. At the low end, you might decide you

budgeted to make an absolute stack of money for the company, you just won't have the resources to form an IT support division of your own. The exception to the rule is if you buy something like a WebBox (review: issue 29) or a Sun Netra-i, which are specifically made to be installed by non-experts.

This brings us to the second support factor: configuration and development. To set up even the simplest machine you need to consult

A small business: Networks Web Design Services

Networks Web Design Services is a small company breaking into the Web publishing market. The company's server is an Apple Internet Server 8550/132 running WebSTAR, the NetCloak post-processor, a DNS Server, Mail Server and an assortment of other oddments.

The machine hosts a variety of Web sites, using virtual domains via a £16 plug-in chunk of code. "The total cost of set-up for the system was around £2,500 excluding the leased line," says Ben Jamieson of Networks. "For a company to be able to handle large volumes of stable, secure traffic for this cost is pretty good", he adds. The set up of the

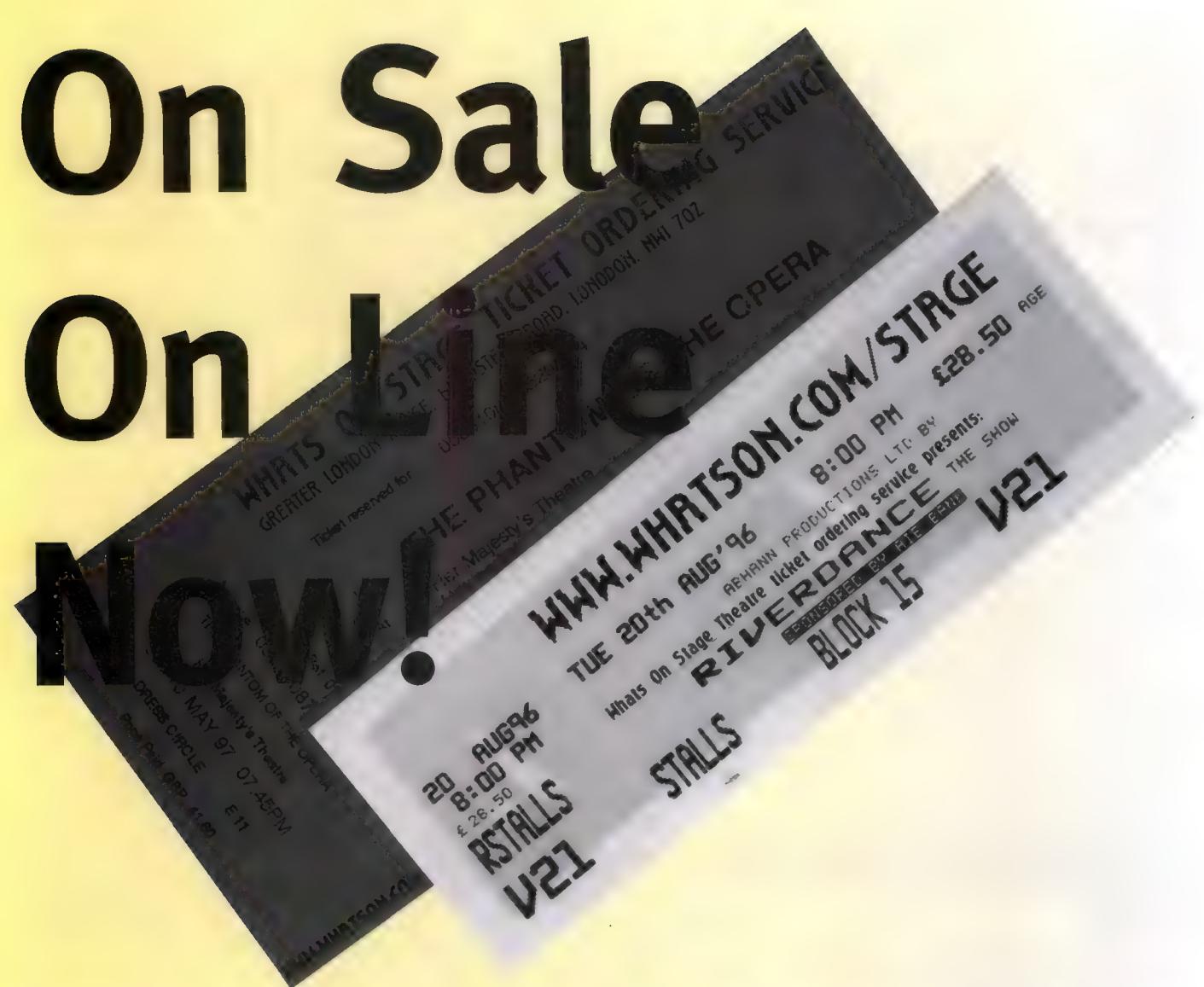
system was pretty simple: "It took about 45 minutes from booting to having our first site online, including copying the site from another Mac," says Lamieson.

Security was obviously a consideration, according to Jamieson, "With massive security holes in both Windows/Intel and Unix solutions, the Mac is susceptible only to ping of death attacks, something you can cut out in your router." Reliability's not a problem either. "My server has been running since December 3. In that time I've added software, domains and so on, and it's never crashed."

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If you're not at the event, you can still learn about the Microsoft products showcased at Scalability Day. Check out the summaries of each of the main presentations to learn more about the powerful Microsoft enterprise solutions.

A computer system large enough to manage a quarter of the world's daily banking activities, Microsoft Windows NT® Server and the Microsoft BackOffice™ family of products prove their capacity to change the face of business computer processing.

Terra-Satellite: A Terabyte of Images Data on Microsoft's 101 "Satellite" Windows NT Server and Microsoft SQL Server prove their scalability by storing and managing 1 terabyte of geospatial data through an Internet-based application. Want to see a satellite picture of your house?

Microsoft boasts extensively scalable Web server software

week updating pages. As size increases, you see separate Web divisions emerging, with people spending all of their time writing HTML, bashing away at FrontPage or coding scripts for dynamic page building. Rule number one is not to skimp on the site once it's up. It can be more damaging to put a site up and let its content get out of date than not to have a site at all. Make sure your staff have the right site management tools (see page 66 for our Site Management Tools Labs tests) and programming tools (Java SDKs, ActiveX programming libraries).

Graphic design is an issue which can be covered in one sentence. Like the initial set-up of the server, it's generally a one-off task; you look at a number of designs, pick one and stick with it. You may tweak the design every so often to keep it fresh, or to exploit some new feature of HTML, but I wouldn't consider employing a full-time designer for anything but the most rapidly evolving site. Stick to freelancers – they're cheaper.

Integrating your old data

One motive for setting up a Web site is that you have a whole load of data on a server which could either make money or enhance the company's brand if it were put on the Web. Many of these are legacy systems such as

A medium-sized business: Capital Radio

Capital Radio, now based in its spanking Leicester Square office (and with tarpaulin over some of the comms kit where the water comes in), has a New Media Unit, a department devoted to the cause of things like Web publishing. A dozen or so people are involved with the upkeep and marketing aspects of the site, half on the editorial/graphics/technical side and the other 50 per cent on sales.

The company's Web system is based on a multi-processor Sun E3000 server. This system was chosen for both performance and the robustness of Sun kit and the Solaris operating system. Says Doug McCallum, head of the unit: "An NT solution was considered but wasn't as good a fit with a lot of the software architecture involved in what is a highly sophisticated site and which was undeniably complicated even on its launch day".

The company used a Web design company to kick-start development, but once up and running has done the job in-house with only occasional consulting. The department is 95 per cent self-supporting. It's also interesting that, in McCallum's words, "We end up to a limited extent helping IT find creative networking solutions."

www.capitalradio.co.uk/

Big businesses: Microsoft vs. Apple

Apple Computer's Web site (www.apple.com/) is an example of how you can run a complex Web set-up without using big, nasty multi-processor Unix systems. The site is made up of 11 assorted Macintoshes, including Workgroup Server 9150s and 8150s, and Power Macintosh 8500s. The machines are split into groups, so that some handle the serving of images, one does clickable image processing, a clump of machines share the various other tasks, and a pair of machines funnel incoming calls to its homepage over to the other servers as necessary.

Microsoft's site (www.microsoft.com/) is enormous by comparison, with the main server cluster being made up of 14 Compaq servers, each with four processors and 512Mb of memory (as we've said, there's no point having a powerful machine if it starts swapping and ruins the performance because of memory shortage). The site uses ASP, Microsoft's dynamic page building system, and hangs off the Internet via more bandwidth than you can shake a stick at. Hence the massive processing capability – with eight 45Mbps WAN connections the processor is most likely to be the bottleneck, especially with dynamic page construction.

mainframes, IBM minis or AS/400s. It's reassuring that companies are increasingly waking up to this desire for system integration. The AS/400, for example, can take an Ethernet card, talk TCP/IP and hence be hooked up into a Web system. Even old rickety boxes like System/38s, given the right hardware can be persuaded to interface to modern LANs and dump data on a Unix or NT machine. The third parties are also getting in on the act. My newest find is Amazon, from Intelligent Environments, which can interface to DB2, CICS, APPC, VSAM, Oracle and Sybase systems.

The big and small of it

Small sites tend to have simple, cheap yet surprisingly powerful systems which have little or no formal support, and are looked after by an enthusiastic employee for a few hours per week. Larger organisations go out and buy hardware specifically for the Web task, and a few thousand pounds buys a powerful machine which will cope with most eventualities. Big jobs need bigger systems and it's the complexity of back-end processing you have to consider when buying a server, not the number of accesses to your site. Software is easy to choose: the Apache or Netscape families for Unix; IIS or Netscape for NT. Stick with the popular ones and you can't lose.

Support and maintenance, specifically staff, are important. A single staff member may well cost more than a leased line and server, so pick the right people. Consider money and your existing staff's abilities when you buy your server. Make sure you keep on top of the Web site as there's nothing worse than a site that's hardly ever updated. And make the most of the existing data in the company; there are plenty of products to bridge the gap between TCP/IP and legacy systems.

David Cartwright (dsc@nww.emap.com) is the technical editor of *Network Week Magazine*.

Web server software

Apache, Unix: free to download

www.apache.org

Stronghold, Unix: £599

<http://stronghold.ukweb.com/>

Netscape FastTrack Server, Unix or NT: from £220

http://home.netscape.com/comprod/server_central/product/fast_track/index.html

Netscape Enterprise Server, NT or Unix: from £895

Upgrade to Enterprise Server from Commerce or Communications Server: £695

http://home.netscape.com/comprod/server_central/product/enterprise/index.html

Distributed in the UK by Unipalm

www.unipalm.co.uk

Microsoft IIS, NT: free to download

www.microsoft.com/iis/default.asp

Novell Web Server: free to download

http://www.novell.com/intranetware/products/novell_web_server/

Sample server costings

Macintosh SE/30 gathering dust in a cupboard: £0

WebBox (4Mb RAM, 8Mb DRAM): £1,650

www.webbox.co.uk/

Apple Internet Server 7250/120 (16Mb RAM, 2Gb disk): £1,520

Apple Internet Server 8550/200 (32Mb RAM, 2Gb disk): £2,530

Sun Netra-i 5 (entry-level): £5,995 (ranging up to around £52,000)

Sun Entry-level Enterprise Server (Ultra Enterprise 1-140): £6,995

Right said thread

In the third of our Java series, **Simon Brock** explains how Java applets use threads to control how they work with other applications



This month we look at how Java applets use threads to relate to other applications, and to control which program carries out which tasks.

Java applets work with other programs but – just as in any good relationship – they also need a degree of independence. The relationship between the application and the applet relies on co-operation, though the application has the upper hand. Generally, the applet asks the application to carry out a task, and once that's done the applet has to find out if the application has finished that task.

Why threads are important

The relationship between an applet and an application relies on each carrying out separate tasks co-operatively. How do they do this? By using threads.

Threads are a hot topic and the theory behind them is simple. On most computers, lots of programs run at the same time. In fact, the operating system creates the illusion that the programs are running at the same time by allocating a

small amount of processor time to each program in succession. This is usually called pre-emptive multi-programming. It's called multi-programming because there are many programs. And it's called pre-emptive because the execution of each program is pre-empted by the operating system.

But if we want a batch of activities to co-operate within a single application, breaking up that application into a number of programs might not work. This is because the operating system does its best to keep the resources of one program separate from the resources of another when, in fact, we might want the activities to share resources. To get



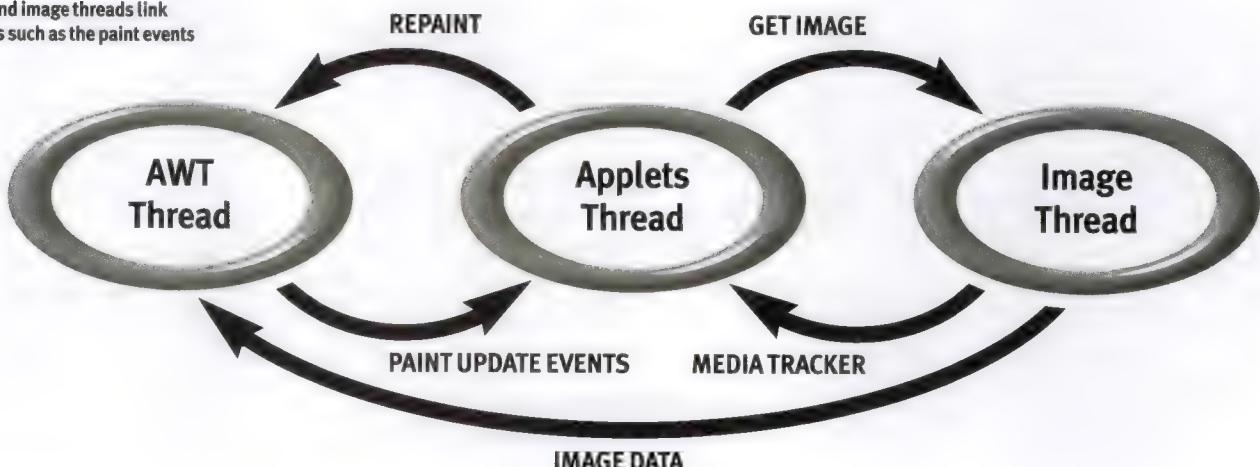
Two applets each using threads for different tasks. The button panel applet uses a thread to display the floor number and play a sound for each floor. The lift doors applet uses a thread to load in the graphic behind the door

around this problem, the idea of a lightweight process or thread evolved. And threads are important when developing Java applets.

Threads and Java

Generally, applets work in two ways. The simplest applets can work in a Web page and only perform actions as a reaction to events. For example, the applet is told

The applet and image threads link various tasks such as the paint events



when the mouse is hovering over it and reacts appropriately. These simple applets don't have a life of their own.

However, all but the simplest applets need a life of their own within the enclosing application and so the applet needs to start its own thread to get a life.

How to define a thread

Everything in Java is an object, and we describe how an object is built by defining a class. One of the most important documents to read when developing Java programs is the description of the standard classes

defined with the language – it's called the Java API Documentation and you can download it from www.javasoft.com. You'll see in this document a class called Applet and a class called Thread.

The usual way to write a class is to take an existing class and extend it. For example, most applets tend to start with a line like this:

```
class MyApplet extends Applet {  
}
```

This says that the new applet, MyApplet, is based on the built-in class Applet. The built-in definition of Applet defines



This applet uses the Mouse methods to move the pieces into position. These methods are called by the AWT thread

How applets interact...

Whether your applet contains threads or not, there are at least two other threads in the enclosing application which provide services to your applet. You can't access either of these directly but your applet will interact with them.

The Abstract Windows Toolkit thread

There has to be a link between the interface to your applet and the services provided by the operating system. This is partly handled in the Abstract Windows Toolkit (AWT) classes and there are various interactions which effect your applet. Firstly, this thread processes events from the host operating system, like the mouse moving or a key being depressed, and maps these events to ones suitable for your applet. It then calls the appropriate method in your applet – such as `mouseMove()` – so that your applet can handle the event. Also, the AWT thread tells your applet when it should display itself by calling the `paint()` method or that it should update its appearance (because it has just become visible) by calling the `update()` method.

The applet can't actually update the display itself. All it can do is ask the AWT thread to call the `update` method soon. The applet makes this request by calling the `repaint()` method.

The image thread

Applets often want to load images such as GIF or JPEG files. We'll go into more detail next month about the complex relationship between asking for the image to be loaded, it being loaded and it being displayed. Basically, when you ask for an image to be loaded using the `getImage()` method, it isn't! Instead, the image thread makes a note that you want an image. When you first try to display the image, via the AWT, the AWT thread then asks the image thread to start loading the image. The image thread and AWT thread then co-operate, the image thread telling the AWT thread that more of the image is available. The AWT thread then displays the image as it loads, building it up line by line. It's possible to force an image to be loaded or to check if an image has been loaded by using the `MediaTracker`. There'll be more on this next month.

various functions – or methods as they're usually called – and what we have to do is replace the standard definition of certain functions with ones that will carry out the operations we want.

For example, an applet must have a `start` method, which is called by the enclosing application after the applet is loaded, and a `stop` method, which is called when the application wants that applet to stop.

If the applet has to start a thread then it has to start it when the applet's `start` method is called and stop it when its `stop` method is called. If we look at the definition of the `Thread` class, we see another collection of methods, including `start` and `stop` methods which have identical declarations to those in the `Applet` class. However, we also see a `run` method, which is called after a thread is started, to tell it to do something.

We now have two choices for implementing a thread in an applet. We can either define a new class that starts from the standard thread definition and replaces the standard `run` method with our own or we can provide a class which can be used as both an applet and a thread.

The class hierarchy of Java. See overleaf for an explanation of the terms used

An applet that's also a thread

The latter approach is most commonly used with applets and to sort that out we rely on an interface. At first glance, an interface seems to be the same as a class declaration.

However, the big difference between a class and an interface is that while a class is used to build objects, an interface is used to say what capabilities a class might also have. In this case, we want an applet to behave a thread and if we look at the definition of the `Thread` class we see something that looks like this:

```
class Thread extends Object  
implements Runnable
```

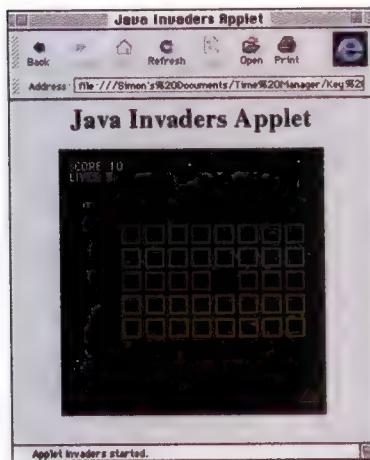
Objects

Component

Container

Panel

Applet



All of these moving elements are handled by separate threads.

This says that the class Thread is based on the standard class Object.

This is what all classes are based on and the relationship between these classes is explained in the box out on class hierarchy, right. The implements Runnable section says that objects of this class must have the attributes of the Runnable interface which means they must have a run method.

Now we can put all this together and produce a declaration for an applet which behaves as a thread. Such a declaration will look like this:

```
class MyApplet extends Applet
implements Runnable {
```

}

The code

Applets which behave as threads almost always have the same structure, shown below:

```
class MyApplet extends Applet
implements Runnable {
public Thread AppletThread;

public void init() { ... }

public void start() {
if (AppletThread == null)
AppletThread = new Thread(this);
AppletThread.start();
}

public void run() {
while (AppletThread != null) {
// do something
}

public void stop() {
AppletThread = null;
}

// other methods
}
```

The init() method

The init() method is called by the application enclosing the applet to tell it

to initialise. Generally, your applet would use this to set up its internal structures and start image loading. In Netscape Navigator, you'll often see a message appear in the status bar after this method has finished along the lines of 'Applet fred initialised'.

The start() method

After the applet has been initialised, the enclosing application tells the applet to start. In this case, the applet checks to see if there's a thread running already by looking to see what's in the variable AppletThread.

If that's null, it creates a new thread and starts it. When the thread runs, the run method will be called. In Navigator, you'll notice when this method has been called because you'll see a message appear in the status line that 'Applet fred started'.

The run() method

This is where our thread does its work. Once everything has started, the enclosing application calls this method to tell the thread it can do some work. If this method ever ends, then the thread will have finished.

Generally, there's a loop in this method where the thread does its work. Often it will do a small amount of work and then use the sleep() method. When a thread is sleeping, the enclosing application will let another thread run.

The stop() method

The stop() method is generally called by the enclosing application when this thread has to stop. If this is a Web page, then this method is called when the user moves to the next page. There are various ways to stop a thread, but one of the simplest is to set the contents of the variable to null – effectively destroying it.

Final words on threads

An applet can start any number of threads to different tasks and it is possible to perform various forms to control them by, for example, changing their relative priority. However, with all such things be slightly careful about starting too many threads. As the boxout on applet thread co-operations shows, there are a number of threads working with your applet already and you can slow down your applet by using too many.

Simon Brock is a Java developer and the technical director of Wide Area Communications, a software development company. You can email him at sbh@widearea.co.uk.

The class hierarchy

Unlike conventional, non-object oriented languages, the library of standard Java facilities is defined as a strict hierarchy. The hierarchy is way too big to reproduce completely here but it's useful to see how the class Applet is defined in terms of other classes.

The general idea when looking at the diagram on page 129 is that everything is built on something else. We say that a class inherits all the attributes of another class. When a class inherits from another, it can pass on the methods it inherits without change or override them with its own. Therefore, the Applet class does have definitions for members like start and stop, but they don't do anything. Therefore when you override them, your applet does something!

OBJECT – All classes in Java are based on class Object, which provides some very simple facilities.

COMPONENT – A Component is part of the Abstract Windows Toolkit. The class provides all the event handling which we use at the levels above – so all the Mouse methods are defined here.

CONTAINER – A container holds Components and allows the system to manipulate a number of components as a single entity.

PANEL – A panel actually provides the space for a component but is also the main class that the Abstract Windows Toolkit recognises. Multiple panels can be put together to form complex user interfaces.

APPLET – This is the basis of all our applets. It contains various methods which we override to create our own applets – such as start and stop – plus various other methods which provide facilities – such as image loading via getImage() – which we don't change.

Upcoming Java Features

August Manipulating graphics with a Java applet

September How to write your own Java interface

faxback

Keep up-to-date

This is part of a series of Java articles.

The first in the series covered How to Get to Grips with Java and appeared in the May issue.

Last month we covered how to Write a basic Java applet.

You can get hold of copies of these articles from our Faxback service. Turn to page 141 for more details.

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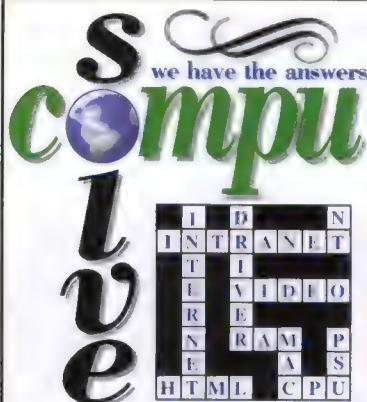
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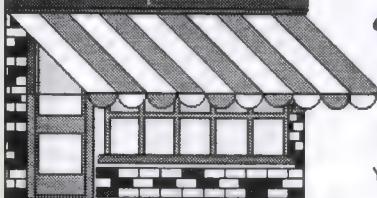
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The Java is pretty big on training and spreading Net awareness, and start 'em young with their special kid's session on Saturday Morning from 9-11am, downstairs in the main café, where all the famous Disney characters can be seen, some in animated form. Café Java are constantly aiming to provide new services: at the moment, Java are currently upgrading their IRC (Internet Relay Chat/Conferencing) capabilities. Java have text IRC, and are now also adding sound via microphones and even have plans to introduce video conferencing soon. This means Net users can also talk to anyone around the world via the Web, and when video is introduced, even see them. With IRC, anyone of any age can use computers to communicate, with a minimum of tuition.

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The ability to take raw statistics and make sense of them for the readers

Writing skills/experience

A good grasp of HTML

The salary is negotiable dependent on experience and qualifications.

If you reckon you fit the bill, send us a letter giving details of five ways in which you would take the service provider tests forward. We'd also like to see your CV and any examples of written work you've had published.

Send all of this to:

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provider la

Internet Magazine carries out the most comprehensive set of performance tests on Internet Access Providers in the UK. Not only do we test how easy it is to get a connection, but also the speed of downloads once you're online:

Problems at LINX

Havoc was caused this month when London Internet Neutral Exchange (LINX) at London's TeleHouse had a power outage. Although this outage lasted for less than an hour, the subsequent network upheaval and the large-scale redirection of traffic caused problems for the IAPs in our tests.

As only some of the IAPs we test tried to dial into LINX at the time of the outage, we decided to take out all results in that six-hour period in order to guarantee the tests' statistical accuracy.

Furthermore, because the LINX page itself was one of the test pages we asked all the IAPs to download as part of the test, we thought it only fair to remove this data.

Performance results

This month saw 63 Internet Access Providers (IAPs) tested and the results over the following two pages give the industry's most comprehensive indication of how providers fare in laboratory test conditions.

There has been a big shift in the top ten this month, and only Easynet managed to retain its top-ten position.

The statistics

This month, 37 IAPs recorded 100 per cent availability. This is approximately two-thirds of the total providers tested, and the average availability rating was a healthy 96.12 per cent. Only Gates Net Communications had a very poor result in this area. The average speed to download a Web page was 21.69 seconds, slightly up on last month's figure.

Number one

Former number one provider, BT Internet, has bounced back from a couple of months in the provider test wilderness. BT can be well pleased with its good set of results. What's more, BT Internet is the only provider this month to achieve a Web-speed download time of under ten seconds.

"We're constantly striving to improve the level of service and are pleased when improvements are recognised by an impartial third party," says Mike Cunningham, BT Internet operations manager.

"We've recently migrated to a new PoP structure. This migration is part of our constant improvement process, but we can't pinpoint a single factor which could have so dramatically improved our league table position."

Who did well

CYBERphile has shot back up the chart after a disappointing performance in the June issue. Prior to that they had finished comfortably in the top ten, hitting number two back in April.

Bryn Foulkes, technical director, explains CYBERphile's recent problems. "We did witness a drop last month, as our backbone provider Xara had problems with its equipment."

It appears that CYBERphile had to put a higher spec router in place



in the States, causing it temporarily to use alternative routes.

CYBERphile has also updated the software in its own router. "We were using a 33.6 code but were told the throughput wasn't as good as it should be. It was more of a beta code. Telebit has now written a new code and the majority of our customers have noticed an improvement."

Isle of Man based Enterprise made significant boardroom changes earlier in the year, which saw more investment in their Internet infrastructure.

"We try to run a tight ship here," says Barry Frost, director. "We have improved the bandwidth and improved the user to modem ratio to about 16:1." Enterprise has around 10,300 predominantly dial-up customers and is moving towards the corporate market to try to build some level of stability.

"In the next couple of months our main pipe will go frame relay straight to London Telehouse so we hope to cut out a couple of problematic hops and go even faster," says Frost.

Nildram comes back into our tests after pulling out last month. It makes a welcome chart entry at number seven.

...And downs

Gates Net Communications scored poorly in the availability ratings and

director Dave Ryan is the first to admit it has problem with its suppliers. "We supposedly have 30 lines running, but the Energis system was hunting on about seven. It was very annoying but was totally out of our hands."

This means the maximum number of users who can log on at once is around seven or eight. The test results reflect this, and with 100 per cent availability, Gates Net Communications would have found itself in second place.

The reason for SAQ Network's bad showing in this month's chart "was down to a problem with the company that supplies our lines, therefore the switching mechanism wasn't allocating free lines to clients, therefore the availability suffered quite heavily," says Geraint Bungay, marketing manager.

Cancellations

Avel PiP changed its dial-up number halfway through this month's tests. The dial-up number, which was (0171) 572 1400, changed to (0645) 288 336.

And thanks to...

A word of thanks goes out to Steve Browne who has been Mr Tests Man for *Internet Magazine* for the last year. He has moved to work with the online service provider, CompuServe. We wish him all the best.

If you work for a provider that's not tested here and would like to be included in our Labs tests, please send details to Paul Bennett. You can contact him at: paulb@internet.emap.com.



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Internet tests



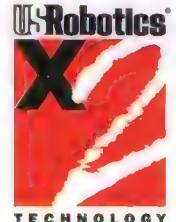
This month's best IAPs, as tested in Internet Magazine's labs

This month	Line	IAP	Phone	Support	Availability (higher is better)	Tested Speed (Kbytes/sec)	Stressed Speed (Kbytes/sec)	Avg. line speed (Kbytes/sec)
1	48	BT Internet	(0800) 800 001	24-hrs-a-day	100.00	9.67	24.00	16.24
2	36	CYBERphile	(01543) 454 840	8.30am-6.30pm Mon-Fri	100.00	11.33	32.33	16.93
3	18	Enterprise	(01624) 677 666	9am-6pm Mon-Fri / 10am-4pm Sat	100.00	11.67	26.33	17.12
4	15	Primex	(07000) 774 639	9am-6pm Mon-Fri	100.00	11.67	36.33	17.20
5	5	Easynet	(0171) 681 4444	8am-10pm Mon-Fri / 10am-6pm w/e	100.00	10.33	31.00	17.79
6	21	Cyber Ware	(01733) 765 005	9am-midnight Mon-Sun	100.00	12.33	24.67	17.86
7	N/A	Nildrum	(01442) 891 331	9am-11pm every day	100.00	12.00	24.33	18.04
8	20	Entanet	(0500) 368 2638	9am-9pm every day	100.00	11.33	33.67	18.10
9	13	Global Internet	(0181) 957 1047	Mon-Fri 9am - 9pm Sat & Sun 10am - 6pm	100.00	11.33	35.67	18.12
10	19	VossNet	(01753) 737 800	9am-7pm Mon-Fri / Sat 10am-3pm	100.00	10.67	24.00	18.17
11	49	Netkonect	(0171) 345 7777	9am-6pm Mon-Fri	100.00	12.00	33.67	18.28
12	31	Oxford CommUnity Internet	(01865) 856 000	9am-6pm Mon-Fri	100.00	14.33	31.33	18.82
13	3	Onyx	(0345) 715 715	8.30am-6.00pm Mon-Fri	95.00	13.00	28.00	18.18
14	9	Cerbernet	(0171) 360 8000	9am-6pm weekdays (pager 9am-6pm w/e)	93.33	13.33	25.00	18.14
15	14	London Web	(0181) 349 4500	9am-9pm Mon Sat / pager Sun	93.33	13.33	31.67	18.27
16	45	Internet Central	(01270) 611 000	9am-6pm Mon-Sat	94.74	13.67	30.67	18.55
17	12	CompuServe	(0800) 289 378	9am-9pm every day	95.00	13.00	31.67	18.73
18	43	NetDirect Internet	(0171) 732 3000	9am-7pm Mon-Fri 9am-5pm Sat	100.00	13.00	42.00	20.17
19	33	CIX	(0845) 355 5050	9am-midnight Mon-Fri / 10am-6pm Sat	100.00	12.33	47.00	20.19
20	50	Poptel	(0171) 923 9465	9.30am-6pm Mon-Fri	100.00	10.00	56.67	20.21
21	40	NetMatters	(01502) 580 000	7.30am-8pm Mon-Fri / 10am-8pm w/e	100.00	15.00	31.33	20.22
22	7	ClaraNet	(0171) 647 1000	24-hrs-a-day	100.00	10.67	43.33	20.31
23	8	Pavilion	(01273) 607 072	9am-5.30pm Mon-Fri	90.48	10.67	39.33	18.47
24	10	Intonet	(0181) 941 9195	8am-8pm Mon-Sat	100.00	14.67	29.67	20.49
25	41	AIC - Entanet	(01279) 865 290	9am-5pm Mon-Sat	100.00	14.33	30.00	20.54
26	16	Cable Internet	(0500) 541 542	9am-9pm every day	95.00	10.00	66.67	19.77
27	4	Zoo Internet	(0345) 326 326	9am-9pm 7 days a week	100.00	11.67	49.67	20.96
28	24	Maidenet	(01628) 825 757	9am-5pm Mon-Fri	100.00	12.67	33.33	21.09
29	46	Frontier Internet Services	(0171) 242 3383	9am-7pm Mon-Fri / Sat 12pm-6pm	86.36	12.67	36.00	18.23
30	42	Baynet	(01222) 256 401	8am-6pm Mon-Fri / 9am-5.30pm Sat	100.00	13.33	34.33	21.21
31	38	Web Factory Leicester	(0116) 223 0070	9am-5pm Mon-Fri	100.00	14.33	43.67	21.38
32	29	Dolphin Internet	(0181) 932 5000	24 hour pager service	100.00	13.67	35.33	21.43
33	47	IFB - Wintermute	(01224) 333 300	9am-6pm Mon-Fri	100.00	13.33	41.67	20.09
34	37	Prestel Online	(0990) 223 300	24-hrs-a-day	100.00	11.67	43.00	21.59
35	5	U-Net	(01925) 484 444	9am-9pm Mon-Fri / email at w/e	100.00	13.00	71.00	21.85

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This month's best IAPs, as tested in Internet Magazine's labs

This month	Last month	Provider	Phone	Support time	Availability (higher is better)	Fastest Web speed (secs)	Slowest Web speed (secs)	Avg. Web speed (secs)
30	64	Legend Internet	(01274) 743 500	8am-8pm Mon-Sat	90.48	12.00	29.00	19.77
37	23	Discovery	(01203) 364 400	8.30am-5pm Mon-Fri	100.00	14.33	35.33	21.96
38	1	Demon	(0181) 371 1234	24-hrs-a-day	100.00	13.33	91.33	21.99
39	30	Aviators Network	(01727) 868 468	24 hour callback	82.35	12.67	39.00	18.16
40	11	ProWeb	(0500) 636 343	10am-4pm -Mon-Fri	86.67	12.67	37.00	19.13
41	2	SAQ Network Services	(0800) 801 514	24-hrs-a-day	94.74	13.00	86.33	20.95
42	25	Manx Computer Bureau	(01624) 623 841	9am-5.30pm Mon-Fri	100.00	13.00	34.33	22.16
43	17	Direct Net @ccess	(01232) 330 311	9am-6pm Mon-Fri / 9.30am-5.30pm Sat	90.48	12.67	42.33	20.05
44	63	Abel Internet	(0131) 445 5555	9am-11pm every day	92.86	15.00	32.00	21.00
45	35	EDI / TriNet	(01539) 731 000	Mon-Sat 9am-5.30pm	100.00	13.33	49.67	22.88
46	27	Zen Internet	(01706) 713 714	9am-8pm Mon-Fri / 10am-5pm w/e	97.44	11.33	75.33	22.30
47	28	GatesNet Communications	(0181) 561 5040	9am-10pm Mon-Sat	73.91	11.33	38.67	17.67
48	39	AAP Internet	(0181) 427 1166	10am-8pm Mon-Fri 2pm-6pm w/e	100.00	15.00	43.33	24.12
49	54	Zynet	(01392) 209 500	9am-6pm Mon-Sat	100.00	16.00	41.33	24.20
50	26	Technocom	(01753) 714 200	9am-5.30pm Mon-Fri	95.00	13.00	66.00	23.46
51	60	I-Way	(0118) 958 0058	8.00am-6.30pm Mon-Fri	94.74	17.67	39.33	24.24
52	61	Pinnacle	(01293) 613 686	9am-7pm Mon-Fri	100.00	13.00	70.33	26.11
53	53	Fast-Net Developments	(0161) 291 8330	24-hrs-a-day	95.00	12.00	80.00	25.93
54	56	Web Factory Head Office	(01782) 858 585	9am-5pm Mon-Fri	82.35	14.00	52.33	22.97
55	51	REDNET	(01494) 511 640	9am-5.30pm Mon-Fri	83.33	12.33	61.00	23.29
56	52	Datanet	(01252) 810 081	24-hrs-a-day	100.00	12.00	102.67	28.13
57	22	UUNet Pipex	(0500) 474 739	9am-8pm Mon-Fri / Sat 10am-6pm	94.74	12.67	62.33	28.82
58	59	iQ Internet	(01273) 327 088	9am-5.30pm Mon-Fri	87.50	13.00	85.33	27.17
59	44	WSS Internet Access	(01793) 420 764	24 hour manned support or answering machine	93.33	14.33	91.67	30.69
60	N/A	Mercury Internet Dial	(0500) 200 980	24-hrs-a-day	100.00	12.00	142.67	32.94
61	55	Hiway	(01635) 567 200	8.30am-6pm Mon-Fri	100.00	15.00	148.00	34.04
62	58	Sonnet Internet	(0171) 891 2000	9am-9pm Mon-Fri / 9am-6pm Sat	82.61	15.00	63.67	29.59
63	61	AngliaNet	(01473) 211 022	8am-9pm Mon-Sat / 11am-7pm Sun	95.00	13.00	123.00	39.96

How the performance tests work

The Windows 95 tests have been going for more than six months and an ever-increasing number of IAPs now want to be included. The tests allow us to assess how easy it is to establish a connection (the availability figure) and also evaluate the performance of the service once the connection has been established (the average Web speed). The fastest and slowest speed figures reveal the fastest and slowest accesses to our test Web sites. Our modems log onto each access provider many times over the testing period (up to 25 April) and download pages from sites on the Internet.

In the tests this month, we looked at the following sites: the TUCOWS homepage (www.tucows.com), a static page on the CNN Web site (www.cnn.com) and the LINX (London Internet Exchange) Web page (www.linx.net).

In future, the tests will target various Internet Exchanges around the world which will really test out the IAP's international bandwidth – and, of course, will keep them on their toes.

The tests themselves have been made more sturdy, and the (rare) crashes now occurring are down to Windows 95, and the way it handles

dial-up networking. Multiple machines will shortly be set up for the tests, to ensure that Windows' various stacks don't have to work too hard, and that the number of connections for each IAP can be increased dramatically.

To rank the IAPs, we've calculated the geometric mean of availability and average Web performance. Each of these results is made relative to the best performance available; the best for this month are 100 per cent for availability and 16.74 seconds for average Web performance.

Each of these results is considered equally important, so a provider with a slightly below par availability result, but a very fast average Web download speed (for example, Onyx and Cerbernet), will come out higher than a provider with 100 per cent availability but a slower average speed (for example, Mercury Internet Dial and Hiway).

● The tests for this month were started on Friday 16 May and ran until Friday 30 May.

how big is your imagination ...

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LINKS

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which prov

The most up-to-date information is vital when you're choosing from the hundreds of Internet Access Providers. With news of this month's new services, takeovers and IAP pricing, you'll find no better guide than our Which Provider section over the following five pages.

The West Country has witnessed a hive of Internet activity this month. Bristol-based Kaliba Netlink leads the way with its tenner-a-month dial-up subscription.

Also in Bristol, Net UK is charging £8.25 a month for full UK coverage and Epinet, based in Cheltenham, offers a similar package for £14.60. Concentrating on the Hertfordshire area, Watford.net offers a year's connection for £62 including VAT.

Who's buying what

Easynet has bought fellow ISP Technocom for £1.5 million plus £165,000 worth of Easynet shares. Easynet will also pay out a further £380,000 if Technocom reaches

profit figures of £140,000 after tax in the financial year up to 30 June 1997.

David Rowe, chairman and chief executive of Easynet, commented, "This acquisition brings to the group a network specialist company with a rapidly growing corporate Internet customer base."

Free Net access for six months

Infotrade users can now get a six-months' free subscription which includes up to two hours online per month. After the six-month period the standard subscription rate kicks in at £2.95 for two hours online. After this, charges are £1.55 per hour (2.6p per minute).

Zetnet has also reduced its prices. A dial-up account will now set you back £8.50 a month (including VAT) and you get a 5Mb of Web space thrown into the deal.

New business services

Cerbernet has launched a new service aimed at small businesses and home users. With Cerbernet Direct33 you get a permanent Internet connection at 33.6Kbps in most areas.

This permanent Internet connection acts like a leased line, so you don't have to pay any additional phone charges. The service starts at £1,600 per year and is available to anyone with a standard modem.

Worldwide Net access

Former *Internet Magazine* number one IAP, SAQ Network, has announced an alliance with i-Pass which will allow its subscribers to dial into the service from around 1,000 PoPs in over 150 countries worldwide. Geraint Bungay, SAQ marketing manager, said: "This new option will be available to all our clients from June onwards, at no extra charge."

U-Net has also leapt onto the i-Pass corner. Users wanting to use the i-Pass system will get i-Pass Dial Wizard (iDW) software which includes an international phone book of access numbers.

Latest dial-up figures

For the latest dial-up figures, check out *Internet Magazine*'s hotlist league table, on the Web at www.internet-sales.com/hot/league.shtml.

If you have any IAP news please email us at providers@internet.emap.com.

How to choose an IAP

Until some enterprising telecommunications company follows the US route and offers free local calls, one of the most important considerations when choosing an access provider will be your phone bill. Make sure you go for an IAP which offers local call access to the Internet.

How the IAPs charge

Most providers offer unlimited access for a flat monthly fee, but others, like AOL and CompuServe, charge by the hour. This can be a cheaper option if you're not expecting to be online much during a month, but can soon add up otherwise.

When the chips are down...

Another important consideration, especially if you're new to the Internet, is technical support. Historically, the quality of support offered by many companies has been atrocious, but some are starting to give a much better service. Don't think they're being charitable though! They have an

obligation to ensure you're entirely happy with the service, and they know there are plenty of other service providers willing to take over if they don't meet your expectations.

Before signing up with an IAP, call its support number at different times of the day to see how easy it is to get through. Although some companies may advertise a round-the-clock service, it's not much use if there's only one person answering the phone.

And once you're online, let us know! Test your account by sending a message to: newusers@computing.emap.co.uk.

We'll send a friendly reply by return so you know that your account is running as it should.

Backbone providers

IAPs buy access to the Internet in the same way you do. The only difference is that they pay for big direct connections. Your IAP's backbone determines the quality of your connection and the ability of your IAP to expand its bandwidth, so check it out before signing up.



Forget the virtual world, let real people in real offices guide you through cyberspace. Whether you're already connected to the Net or wondering how to make it work for you, call the i-way helpline 0118 958 0058.

i-way helpline 0118 958 0058

email: i-way@i-way.net.uk website: www.i-way.co.uk

Telephone 0171 754 9734 West London 0181 755 0058 Oxford 01865 200700 Swindon 01794 880700

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vider?



The most comprehensive listing of UK access providers available

Name	Telephone	Email	Web page	Cost (pm)	Backbone
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Abel Internet	(0181) 427 1166	sales@aapi.co.uk	www.aapi.co.uk	£8.51	Netkonect
ACE	(0131) 445 5555	info@abel.net.uk	www.abel.net.uk	£7.50	BTnet
Airtime Internet Resources	(01254) 528 204	info@ace.co.uk	www.ace.co.uk	£10	Planet
Aladdin	(01489) 782 221	sales@airtime.co.uk	www.airtime.co.uk	£13	Pipex
Almac	(01324) 666 336	info@aladdin.co.uk	www.aladdin.co.uk	LLO	Xara
AOL	(0800) 279 1234	info@almac.net	www.almac.net	from £5	BTnet
Astra Internet	(0800) 018 2001	query@aol.com	www.uk.aol.com	from £5.95	AOL
BTnet	(0171) 345 4000	sales@astracom.co.uk	www.astra.co.uk	£11	Xara
Atlas	(0171) 312 0400	info@atlas.co.uk	www.uk.pi.net	£7.99	BTnet
Avel PIP	(01752) 600 101	info@avel.co.uk	www.atlas.co.uk	£12	PSinet
Avatars Network	(01727) 868 468	info@avnet.co.uk	www.avel.com	£12	Pipex/Xara
Baynet	(01222) 256 401	enq@baynet.co.uk	www.avnet.co.uk	£10	PSinet
Beacon Internet Services	(01749) 831 056	sales@thebeacon.co.uk	www.baynet.co.uk	£12	Netkonect
BT Internet	(0800) 800 001	support@btinternet.com	www.n-e-t.co.uk/beacon/	£12	NetOnline
BusinessNet	(0171) 390 9933	sales@business.net.uk	www.btinternet.com	£11.75*	BTnet
Cable Internet	(0500) 541 542	sales@cableinet.co.uk	www.business.net.uk	ISDN/LLO	BusinessNet
Cable Online	(0800) 506 506	sales@cableol.co.uk	www.cableinet.co.uk	£10.99	Cable Internet/ISPC
CD-Online	(0171) 436 8677	info@cd-online.co.uk	www.cableol.net	£14.95	Cable Online
Celtic International	(01222) 488 555	sales@celtic.co.uk	www.cd-online.co.uk/pc	£12	Pipex
Cerbernet	(0171) 360 8000	sales@cerbernet.co.uk	www.celtic.co.uk	£15	Cymru.net
Cheapnet	(0990) 168 160	info@cheapnet.co.uk	www.cerbernet.co.uk	£12	Wisper
Cityscape Global Media	(01223) 566 950	sales@cityscape.co.uk	www.cheapnet.co.uk	£58.75* pa	INS
Cityway Internet	(0181) 930 6666	info@cityway.com	www.cityscape.co.uk	£15	Demon
CI	(0845) 355 5050	sales@cix.net.uk	www.cityway.com	£12.75	Pipex
ClaraNET	(0171) 647 1000	sales@clara.net	www.cix.net.uk	from £6.25	BTnet
Cocoon Internet Services	(0171) 831 7704	admin@cocoons.co.uk	www.clara.com	from £3.99	Netkonect
Colloquium	(0500) 008 543	sales@colloquium.co.uk	www.cocoons.co.uk	£15	Pipex
CompuServe	(0800) 289 378	70006.101@compuserve.com	www.colloquium.co.uk	£12	CompuServe
CPD Online	(0181) 446 7890	sales@cpd.co.uk	www.compuserve.com	£12	Nildram
CyberRahite Internet	(01543) 454 840	info@cyberphile.co.uk	www.cyberspace.cpd.co.uk	£9.99	Xara
Cyberscape	(01253) 724 000	glen@cyberscape.net	www.cyberphile.co.uk	£14.10	Cable Internet/ISPC
Dataset	(01252) 810 081	info@data.net.uk	www.cyberscape.net	£12.50	Planet Online
Demon Internet	(0181) 371 1234	sales@demon.net	www.data.net.uk	£10	Demon
Dialnet	(0800) 881 881	sales@dialnet.com	www.demon.net	from £9	Cable Internet
Direct Connection	(0181) 297 2200	helpdesk@dircon.net	www.dialnet.com	£11.49	BTnet/Pipex
Direct Net Access	(01232) 330 311	info@d-n-a.net	www.dircon.net	£7.50	Xara
Easynet	(0171) 681 4444	postbox@easynet.net	www.d-n-a.net	from £9.90	Easynet/BTnet
EDI	(01539) 731 000	info@edi.co.uk	www.easynet.co.uk	£15	Planet Online.
ElectricMail	(01223) 501 333	info@elmail.co.uk	www.edi.co.uk	ISDN/LLO	PSinet
Enta	(0500) 368 2638	info@enta.net	www.elmail.co.uk	£9	VBCnet
Enterprise	(01624) 677 666	sales@enterprise.net	www.enta.net	£8	BTnet
Epinet	(01242) 821 000	info@epinet.co.uk	www.enterprise.net	£14.60	Xara/Energis
Fast-Net Developments	(0161) 291 8330	enquiry@sales.fast-net.co.uk	www.epinet.co.uk	£12.50	Planet
Force 9	(01909) 531 923	sales@force9.net	www.fast-net.co.uk	£7	Force9
Fourth Level Developments	(0117) 985 4455	sales@flevel.co.uk	www.force9.net	£10	Technocom
Frontier Internet Services	(0171) 242 3383	info@ftech.net	www.flevel.co.uk	£10	Xara
Gates Net Communications	(0181) 561 5040	sean@gates.co.uk	www.ftech.net	£8.30	Netkonect
Global Internet	(0181) 957 1047	info@globalnet.co.uk	www.gates.co.uk	£7.50	BTnet and Xara
GreenNet	(0171) 713 1941	support@gn.apc.org	www.globalnet.co.uk	£13.50	Pipex
H-Net	(0181) 532 6532	internet@higrade.com	www.gn.apc.org	£11.75*	Planet Online
Hiway	(01635) 567 200	info@inform.hiway.co.uk	www.hi-net.co.uk	£12.75	Aladdin
IBM Global Services	(0990) 426 426	globalnetwork@uk.ibm.com	www.hiway.co.uk	from £10	IBM Global Network
BT - Wintermute	(01224) 333 300	info@wintermute.co.uk	www.ibm.net	£12.50	BTnet/Wisper
Impact Web Publishing	(01628) 522 099	nikki@impactwp.com	www.wintermute.co.uk	LLO	Xara
Infotrade	(0800) 226 600	enquiries@infotrade.co.uk	www.impactwp.com	£69.88pa*	BTnet
Internet Central	(01270) 611 000	sales@netcentral.co.uk	www.infotrade.co.uk	£11.75*	Cable Internet/ISPC
Internet Discovery	(0181) 694 2240	sales@idiscover.co.uk	www.netcentral.co.uk	£10	Pipex/VBCnet
Internet Network Services	(0181) 296 9201	info@insnet.net	www.idiscover.co.uk	LLO	INS
Internet Solutions for Business	(01203) 715 600	sales@isqb.net	www.insnet.net	ISDN/LLO	Cable Online
Internexus Communications	(01254) 699 030	postmaster@mail.internexus.co.uk	www.business-solutions.net	£8.06	Xara
Intonet	(0181) 941 9195	info@intonet.co.uk	www.internexus.co.uk	£10*	BTnet
IQ Internet	(01273) 327 088	sales@iql.co.uk	www.intonet.co.uk	£9.99	Planet Online
SPC	(01628) 395 95	barry@ispcc.net	www.iql.co.uk	ISDN/LLO	Cable Internet/ISPC
	(01482) 602 742	info@karoo.net	www.ispc.net	£8.33	Planet Online
			www.karoo.net		

If you work for a provider that's not listed here send the details to: providers@internet.emap.com

Key: LLO - leased line only ISDN/LLO - ISDN & leased line only * - inc VAT ** - annual price inc VAT

which provider?

The most comprehensive listing of UK access providers available

Name	Telephone	Email	Web page	Cost (pm)	Backbone
Full UK coverage (continued)					
LineOne	(0345) 777 464	enquiries@LineOne.net	www.LineOne.net	from £9.95	BTnet
M.I.T.E	(0181) 881 2111	sales@mite.net	www.mite.net	£10	M.I.T.E
MacLine	(0181) 401 1111	orders@macline.co.uk	www.macline.co.uk	£12	Atlas
Mainstream Technology	(0345) 626 177	sales@mainstream.u-net.com	none	£169.20 pa	U-Net
Mercia Internet	(01827) 69166	sales@mercia.net	www.mercia.net	£11.50*	Netkonect
Mercury Communications	(0500) 200 980	sales@mcmail.com	www.mcmail.com	from £7.50*	CWIX
Mercury Internet Dial	(0500) 200 980	sales@mcmail.com	www.mcmail.com	£10*	Cable and Wireless
Metronet	(0181) 426 4446	bindu@metronet.co.uk	www.metronet.co.uk	£29.99pq	INS
Mistral Internet	(01273) 747 432	info@mistral.co.uk	www.mistral.co.uk	£9.99*	BTnet
MSN	(0345) 002 000	ukweb@microsoft-contact.co.uk	www.uk.msn.com	from £4.95	Pipex
NACAMAR	(01438) 715 100	info@nacamar.net.uk	www.nacamar.co.uk	LLO	NACAMAR
Net Online	(0171) 447 7447	sales@nol.co.uk	www.nol.co.uk	£15	Net Online
Net UK	(01242) 821 000	info@netuk.co.uk	www.netuk.co.uk	£8.25	Xara
Net Village	(0181) 255 6777	info@netvillage.co.uk	www.netvillage.co.uk	£11.99	Planet Online
Netcom Internet	(01344) 395 600	info@netcomuk.co.uk	www.netcom.net.uk	£14.95*	Netcom
NetDirect Internet	(0171) 732 3000	info@netdirect.co.uk	www.netdirect.co.uk	£6.99	BTnet
NetHead	(0171) 207 1100	sales@nethead.co.uk	www.nethead.co.uk	£9.39*	BTnet
Netkonect	(0171) 345 7777	info@netkonect.net	www.netkonect.net	£11.75*	Netkonect
NetMatters	(01502) 580 000	info@netmatters.co.uk	www.netmatters.co.uk	£10	VBCnet
Nettec	(0171) 460 0500	info@nettec.co.uk	www.nettec.co.uk	£12.50	Xara
Netdram	(01442) 891 331	sales@netdram.co.uk	www.netdram.co.uk	£5	Netkonect
On-Line Entertainment	(0181) 558 6114	sysop@mail.on-line.co.uk	www.on-line.co.uk	£5	Pipex
On-Net	(0181) 256 9999	sales@on-net.co.uk	www.on-net.co.uk	ISDN/LLO	On-Net
Onyx	(0345) 715 715	sales@onyxnet.co.uk	www.onyxnet.co.uk	£10	Onyx Internet
Oxford Community Internet	(01865) 856 000	sales@community.co.uk	www.community.co.uk.	£42pq	Octacon
Paragon Software	(01635) 861 111	paragon@parasoft.co.uk	www.parasoft.co.uk	£11.50	Pipex
Paston Chase	(01603) 502 061	sales@paston.co.uk	www.paston.co.uk	£10.57*	Pipex
PC User Group	(0181) 930 6699	info@win.uk.net	www.ibmpcig.co.uk	£15	Pipex
Pinnacle Internet	(01293) 613 686	info@pncl.co.uk	www.pncl.co.uk	£14.50	Pipex
Pipemedia OnLine	(01455) 292 990	sales@pipemedia.net	www.pipemedia.net	£10	VBCnet
Planet Online	(0113) 234 5566	info@theplanet.uk	www.theplanet.net	ISDN/LLO	Planet Online
Pobox	(0990) 168 160	info@pobox.co.uk	www.pobox.co.uk	£10	INSnet
Optel	(0171) 923 9465	info@optel.net	www.optel.org.uk	£10	Xara
PowerNet Gateway	(0500) 778 865	info@proll.powernet-int.co.uk	www.powernet-int.co.uk	£15	Planet Online
Premier Internet	(0181) 213 1710	info@premier.co.uk	www.premier.co.uk	£10	BTnet
Prestel Online	(0990) 223 300	priority@netsales.prestel.co.uk	www.prestel.co.uk	£10.56*	Planet Online
Primex	(07000) 774 639	info@alpha.primex.co.uk	www.primex.co.uk	from £6.50	On-Net/Netkonect
ProWeb	(0500) 636 343	sales@proweb.co.uk	www.proweb.co.uk	from £8*	Cable Internet
PSI Net UK	(01223) 577 577	sales@uk.psi.com	www.uk.psi.com	ISDN/LLO	PSI Net
Quaza	(0800) 528 0000	info@quaza.com	www.quaza.com	ISDN/LLO	Quaza
RR Group	(01285) 647 000	info@star.co.uk	www.star.co.uk	£12	BTnet/Wispr
EDNET	(01494) 511 640	info@red.net	www.rednet.co.uk	£15	Pipex/INS
Relay Business Systems	(0345) 369 999	enquiries@relay.co.uk	www.relay.co.uk	£10	BTnet
Research Machines	(01235) 826 868	sales@rmpc.co.uk	www.rmpc.co.uk	£12.50	Xara
QA Network Services	(0800) 801 514	sales@sagnet.co.uk	www.sagnet.co.uk	£10.64	BTnet/C&W/INS
Scotland Online	(0845) 270 0027	admin@sol.co.uk	www.scotland.net	£10	Sprint
Small Planet	(0171) 515 9889	admin@smallplanet.co.uk	www.smallplanet.co.uk	ISDN/LLO	BTnet
Smartways Internet	(01604) 670 500	info@smartways.com	www.smartways.com	£15	Wispr
Sonnet Internet	(0171) 891 2000	enquire@sonnet.co.uk	www.sonnet.co.uk	£12.50	Xara
SOS Internet	(01271) 321 145	sosi@sosi.net	www.sosi.net	£15	Aspen
Star Internet	(0285) 647 022	info@star.co.uk	www.star.co.uk	ISDN/LLO	BTnet/Wispr
Technocom	(01753) 714 200	isales@technocom.co.uk	www.technocom.co.uk	£12	Technocom
The Network Group	(01703) 452 409	info@network-group.com	www.network-group.com	£15	Pipex
The Web Factory	(01782) 858 585	sales@webfactory.co.uk	www.webfactory.co.uk	from £12.50	The Web Factory
Timewarp Internet	(0161) 950 8855	sales@timewarp.co.uk	www.timewarp.co.uk	£11.75*	ISPC
Total Connectivity Providers	(01703) 571 300	sales@tcp.co.uk	www.tcp.co.uk	from £25.50pq	VBC/Wispr
U-Net	(01925) 484 444	hi@u-net.com	www.u-net.net	£12	U-Net
UK Online	(01749) 333 333	sales@ukonline.co.uk	www.ukonline.co.uk	£9.99	BTnet
Unet Pipex	(0500) 474 739	support@dial.pipex.com	www.uunet.pipex.com	£15	Pipex
VBCnet	(0117) 929 1316	sales@vbc.net	www.vbc.net	LLO	VBCnet
Virgin Net	(0500) 558 844	mail-hq@virgin.net	www.virgin.net	£10	Cable Online
Web Plus	(0345) 932 758	sales@webplus.co.uk	www.webplus.co.uk	£14.10*	Web Ltd/BTnet
Webscape	(01935) 814 850	webmaster@webscape.co.uk	www.webscape.co.uk	£10	Xara
Which? On-line	(0645) 830 240	ogunlarur@which.co.uk	www.which.net	£14.75	Cable Online
WinNet	(0181) 930 6699	info@win-uk.net	www.win-uk.net	£6.75	Pipex
Wirenet Amiga	(01925) 496 482	sales@wirenet.u-net.com	www.wirenet.u-net.com	£115**	U-Net
WISS	(01248) 602 405	enquiries@wiss.co.uk	www.wiss.co.uk	£11.75	Celtic Internet
Xara Networks	(01442) 351 100	sales@xara.net	www.xara.net	LLO	Xara
Zetnet Services	(01595) 696 667	info@zetnet.co.uk	www.zetnet.co.uk	£8.50*	BTnet/ Wisper
Zoo Internet	(0345) 326 326	support@zoo.co.uk	www.zoo.co.uk	£6.99	Zoo
Zynet	(01392) 209 500	sales@zynet.net	www.zynet.co.uk	£10	Xara



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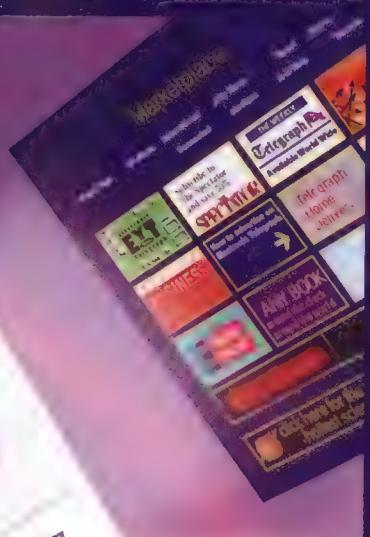
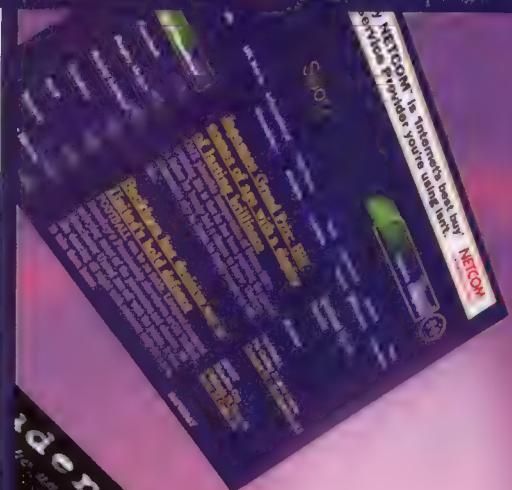
which provider?

The most comprehensive listing of UK access providers available

Name	Telephone	Email	Web page	Cost (pm)	Backbone
East					
AngliaNet	(01473) 211 922	login@anglianet.co.uk	www.anglianet.co.uk/anglianet	£11.75*	Wisper/ BTnet
Cyber Ware	(01733) 765 005	webmaster@cyberware.co.uk	www.cyberware.co.uk	£9.99*	BTnet
foobar Internet	(0116) 233 0033	sales@foobar.co.uk	www.foobar.co.uk	£10	Netkonec
Co-Connect Internet Services	(01449) 770 488	info@keme.net	www.keme.co.uk	£10	Wisper
Merlin Internet	(01724) 276 860	info@merlin.net.uk	www.merlin.net.uk	£15	Hypergrid
Net Solutions Europe	(01255) 233 300	ScottC@nse.co.uk	www.nse.co.uk	£15	Technocom
RJT Internet Services	(01493) 857 048	postmaster@rjt.co.uk	www.rjt.co.uk	£7.99	BTnet
Ireland					
Global Online Media	(01232) 370 124	john@globalgateway.com	www.globalgateway.com	£9.95	PSinet
GateWeb	(01232) 666 850	gateweb@gateweb.co.uk	www.gateweb.co.uk	£10	BTnet
Genesis Project	(01232) 560 552	sales@gpl.net	www.gpl.net	£10	VBCnet
Ireland On-Line	(00353) 1 855 1739	sales@iol.ie	www.iol.ie	IR£10	Pipex
The Internet Business	(01232) 424 190	info@tibus.net	www.tibus.net	£10	BTnet
Unite Solutions	(01232) 668 406	solutions@unite.co.uk	www.unite.co.uk	£12.50	BTnet
London and South East					
Adept	(01843) 850 444	sales@adept.co.uk	www.adept.co.uk	£10	Netkonec
AIIC- Entanet	(01279) 865 290	aic@aic.co.uk	www.aic.co.uk/entanet/	£7.50	VBCnet
Amity Internet	(0500) 200 171	info@amity.co.uk	www.amity.co.uk	£9.90	BTnet
Bogomip	(0800) 137 536	info@mail.bogo.co.uk	www.bogo.co.uk	£12	BTnet
Boots Internet	(01462) 743 112	support@boots.com	www.boots.com	£12.75	VBC Net
CableNet	(01424) 830 700	info@cablenet.net.	www.cablenet.net/cablenet	from £2.95	VBCnet
Centrenet	(0800) 243 336	centrenet-info@innicta.co.uk	www.innicta.co.uk/centrenet	£12.95	BTnet
ComeNet Technology	(0181) 357 9111	sales@come.net.uk	www.come.net.uk	from £7.80	Pipex/VBCnet
Cygnet Internet Services	(0181) 880 4650	info@cygnet.co.uk	www.cygnet.co.uk	£8	Pipex
Dolphin Internet	(0181) 932 5000	info@dolphin.co.uk	www.dolphin.co.uk	£12	BTnet
Exconet	(01268) 453 000	sales@exconet.co.uk	www.exconet.co.uk	£10	Nildram
ExNet Systems	(0181) 296 5577	info@exnet.com	www.exnet.com	£12	VBCnet
FastNet International	(01273) 677 633	info@fastnet.co.uk	www.fastnet.co.uk	£30 pa	VBCnet
FlexNet	(01638) 711 550	info@flexnet.net	www.flexnet.co.uk	£10	Netcom
INET.Ract	(01753) 776 699	sysop@uv.net	www.uv.net	£4.00	Cable Internet/ISPC
Way Brentford	(0181) 758 0058	sales@brentford.i-way.net.uk	www.i-way.co.uk	£10	VBCnet/Pipex/PSinet
Way Oxford	(01865) 200 788	sales@oxford.i-way.net.uk	www.i-way.co.uk/oxford	£30 pa	VBCnet/Pipex/PSinet
Way Soho	(0171) 734 5734	sales@soho.i-way.net.uk	www.i-way.co.uk	ISDN/LLO	VBCnet/Pipex/PSinet
Way Reading	(0118) 958 0058	sales@i-way.net.uk	www.i-way.net.uk	£10	VBCnet/Pipex
Net	(01234) 271 900	sales@kbn.net.co.uk	www.kbn.net.co.uk	£12.93*	Cabletel
ENTnet Internet Services	(01622) 688 748	sales@kentnet.co.uk	www.kentnet.co.uk	£10.50	BTnet
London Internet	(0171) 838 1199	s.ken@globalnet.net	www.london-internet.net	£10	Aspen
London Web Communications	(0181) 349 4500	nicky@londonweb.net	www.londonweb.net	£12.50	Netkonec
MaidenNet	(01628) 825 757	enquires@maidenet.co.uk	www.maidenet.co.uk	£15.00	BTnet
Mailbox Internet	(0171) 731 8558	info@mailbox.co.uk	www.mailbox.co.uk	£10	BusinessNet/VBCnet
Mitoo	(0171) 209 1515	sales@mitoo.co.uk	www.mitoo.co.uk/	ISDN/LLO	BTnet
Moose	(01923) 238 248	info@moose.co.uk	www.moose.co.uk	£10	BTnet
NetForce Group	(01245) 257 788	sales@netforce.net	www.netforce.net	£15	Pipex
Netmania	(0181) 252 1199	info@netmania.co.uk	www.netmania.co.uk	£25.85 pa	BTnet
Paradise Internet Network	(01256) 444 863	sales@pins.co.uk	www.pins.co.uk/	£8	INS net
Pavilion	(01273) 607 072	info@pavilion.co.uk	www.pavilion.co.uk	£12.55	Easynet/BTnet
Pro-Net Internet Services	(0181) 200 3565	sales@pro-net.co.uk	www.pro-net.co.uk	£99 pa	Cable Internet/ISPC
Star 1 Internet Services	(0171) 738 2251	sales@star1.co.uk	www.star1.co.uk	£8	BTnet
Surflink	(0800) 243 777	info@surflink.co.uk	www.surflink.co.uk	£6.25	BTnet
Surrey Internet	(01483) 860 606	office@surrey-net.co.uk	www.surrey-net.co.uk	£12.50	Surrey Internet
SWS Internet	(01483) 851 049	swsnet@k1245.demon.co.uk	not known	£20	Demon
Homes Global Internet Services	(01344) 641 627	info@tgis.co.uk	www.tgis.co.uk	£8.50	Cable Internet/ISPC
The Web Factory (London)	(0171) 637 0310	sales@weblondon.co.uk	www.weblondon.co.uk	from £12.50	The Web Factory
Vodanet	(01708) 863 043	ops.manager@dialin.net	www.vodanet.net	£12.99	Aspen
VossNet	(01753) 737 800	info@vossnet.co.uk	www.vossnet.co.uk	£10	Cable Internet/ISPC
Watford.net	(01923) 440 744	support@watford.net	www.watford.net	£62* pa	Technocom
Wisper	(0171) 581 3222	sales@wisper.net	www.wisper.net	LLO	Wisper
Midlands					
Brumnet	(01922) 598 90	sales@brunel.co.uk	www.brunel.co.uk	£12.50	BTnet
Computalynx	(01604) 231 437	sales@computalynx.co.uk	www.computalynx.co.uk	£10	Cable Internet/ISPC
Darian Technologies	(0121) 693 9955	darian@custard.co.uk	www.custard.co.uk	£50	Cable Internet/ISPC
Discovery	(01203) 364 400	invent@discover.co.uk	www.discover.co.uk	£10	Technocom
Fenetre	(01538) 398 298	sales@fenetre.co.uk	www.fenetre.co.uk	£8	BTnet
GMTnet	(01509) 269 999	sales@gmtnet.co.uk	www.gmtnet.co.uk	£10	BTnet
Griffin Internet	(01332) 606 160	info@griffin.co.uk	www.griffin.co.uk	£12.50	Xara Networks
Internet Access	(01536) 414 424	mailus@intac.co.uk	www.intac.co.uk	£120 pa	BTnet
InterNet UK	(01827) 713 679	sales@zipmail.co.uk	www.zipmail.co.uk	£10	Wisper
	(01902) 651 111	info@mbcis.co.uk	www.mbcis.co.uk	£12	Wave Rider

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Name	Telephone	Email	Web page	Cost (pm)	Backbone
Midlands (continued)					
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Oxford Community Internet	(01865) 856 000	info@community.co.uk	www.community.co.uk	£37.50 pq	Onyx
Power Internet	(01908) 503 126	info@powernet.co.uk	www.powernet.co.uk	£12	BTnet
Skynet Internet Services	(01604) 452 245	sales@skynet.co.uk	www.skynet.co.uk	£10	Cable Internet/ISPC
Stayfree Internet	(0116) 291 0909	sales@stayfree.co.uk	www.stayfree.co.uk	£5.88*	Wisper
The Internet in Nottingham	(0115) 956 2222	info@innotts.co.uk	www.innotts.co.uk	£14.69	Aladdin
The Web Factory (Birmingham)	(0121) 628 6000	sales@webbirmingham.co.uk	www.webbirmingham.co.uk	from £12.50	The Web Factory
The Web Factory (Derby)	(01332) 733 233	sales@weberby.co.uk	www.weberby.co.uk	from £12.50	The Web Factory
The Web Factory (Leicester)	(0116) 223 0070	nick@webleicester.co.uk	www.webleicester.co.uk	from £12.50	The Web Factory
Wave Rider Internet	(01564) 795 888	info@waverider.net.uk	www.waverider.net.uk	£12	VBCnet
Webtronix	(0115) 956 8823	sales@webtronix.co.uk	www.webtronix.co.uk	£12.50	Aladdin
WildNET	(01604) 365 600	stuart@wildnet.co.uk	www.wildnet.co.uk	£10	Cable Internet/ISPC
Woden Network Systems	(0121) 530 4900	derek@woden.com	www.woden.com	£10	VBCnet
Wyenet Internet Services	(01989) 762 476	richard@wyenet.co.uk	www.wyenet.co.uk	£12	Cable Internet/ISPC
North East					
FirstNet Services	(0113) 294 4224	sales@firstnet.co.uk	www.firstnet.co.uk	£12.50	Energis
Hibrid Online	(01423) 541 200	enquires@hibrid.com	www.hibrid.com	£15	NetKonekt
Legend Internet	(01274) 743 500	sales@legend.co.uk	www.legend.co.uk	£12.50	Sprint
North West					
Cybase	(0151) 227 4244	sales@mail.cybase.co.uk	www.cybase.co.uk	£10	Cable Internet/ISPC
Freeway Internet	(01204) 431 313	sales@freeway.co.uk	www.freeway.co.uk	£139.95 pa	VBCnet
Kaleida	(0161) 291 1525	dale@kaleidanet.com	www.kaleidanet.com	£10	Wisper
Kendal Computer Centre	(01539) 722 559	sales@kencomp.com	www.kencomp.com	£12.50	Aspen
Lakesnet	(01539) 731 000	info@lakesnet.co.uk	www.lakesnet.co.uk	£15	Planet Online.
Manx Computer Bureau	(01624) 623 841	postmaster@mcb.net	www.mcb.net	£8	BTnet
North-West Net	(0161) 950 7777	sales@nwnet.co.uk	www.nwnet.co.uk	£8.51	Cable Internet/ISPC
RapidNet	(0151) 722 0304	sales@rapid.net.uk	www.rapid.net.uk	£12*	Cable Internet
Talk 101	(01925) 245 145	sales@mail.talk-101.com	www.talk-101.com	£10	Wisper
The Internet Shop Ramada	(01253) 293 136	black-admin@blackpool.net	www.blackpool.net	£12.99	Aspen
UK Internet Provider	(01772) 908 000	internet@provider.co.uk	www.provider.co.uk	£12	Cable Internet/ISPC
Zen Internet	(01706) 713 714	sales@zen.co.uk	www.zen.co.uk	£10	BTnet
Scotland					
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The Internet Shop	(01355) 276 600	enquiries@inter-s.co.uk	www.inter-s.co.uk	£7.95	BTnet
The Web Factory (Scotland)	(0141) 418 0880	sales@webscotland.co.uk	www.webscotland.co.uk	from £12.50	The Web Factory
TweedNet	(01573) 430 216	mike@scottborders.co.uk	www.calligrafix.co.uk	£15	Scottish Telecom
South Central					
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Athene Internet	(01329) 828 000	jdyer@athene.co.uk	www.athene.co.uk	£10	Wisper
Bournemouth Internet	(01202) 292 900	office@bournemouth-net.co.uk	www.bournemouth-net.co.uk	£15	Aladdin
Cintranet	(01703) 571 000	accounts@cintranet.co.uk	www.cintranet.co.uk	£11.75*	Cable Internet/ISPC
Dart Net	(01794) 511 505	sales@dartnet.co.uk	www.dartnet.co.uk	£8.50	BTnet
Interalpha	(01703) 363 200	enquiry@interalpha.co.uk	www.interalpha.net	£15	Aladdin
IDS Technology	(01202) 659 991	sales@lds.co.uk	www.lds.co.uk	£14.99	BTnet
NewNet	(01705) 647 400	sales@newnet.co.uk	www.newnet.co.uk	£5.88	BTnet
SWIS	(01752) 228 700	swis@swis.co.uk	www.swis.net	£15	Xara
South West					
Abing.co.uk	(01823) 353 771	info@abling.co.uk	www.abling.co.uk	£9.95	INSnet
Aspen Internet	(01672) 511 388	admin@aspen-internet.net	www.aspen-internet.uk	£10	VBCnet & Aladdin
Netgates	(0117) 907 4000	info@netgates.co.uk	www.netgates.co.uk	from £9.79	Wisper
Data Day Computers	(01793) 512 074	sw-1@cccp.net	www.dataday.co.uk	£12	Aspen
Dorset Internet	(01202) 659 991	sales@lds.co.uk	www.lads.co.uk	£14.99	Pipex/ BTnet
Eclipse Networking	(01392) 202 345	eclipse@eclipse.co.uk	www.eclipse.co.uk	£8	Cable Internet
Gifford Internet Services	(0117) 939 7722	admin@gifford.co.uk	www.gifford.co.uk	£8.50	VBCnet
I-way Swindon	(01666) 860 100	sales@swindon.i-way.net.uk	www.i-way.net.uk/swindon	£10	VBCnet/ Pipex
Kaliba Netlink	(0117) 925 2964	info@kaliba-net.com	www.kaliba-net.com	£10	Cable Internet/ISPC
Round One Media	(01237) 425 100	info@rom.net	www.rom.net	£8.33	Telehouse
Surfers Paradise	(01635) 569 123	brian@surfersparadise.net	www.surfersparadise.net	£12	Aspen
Swank & Swagger	(0117) 939 3995	swagger@swagger.co.uk	www.swagger.co.uk	£10	BTnet
West Dorset Internet	(01305) 871 543	tim@wdi.co.uk	www.wdi.co.uk	£15	BTnet
WSIS Internet Access	(01793) 420 764	info@WSISoft.co.uk	www.WSISoft.co.uk/ISPUser/	£9.99*	Pipex
Wales					
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Dean Software	(01978) 311 044	info@deansoft.celtic.co.uk	www.deansoft.com	£10	EUnet
Relay	(01225) 484 449	enquiries@netwales.co.uk	www.netwales.co.uk/	£10	BTnet
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smiley culture

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A round-up of this month's idiotic, esoteric, and eclectic news from the Web...

Hussein my homepage?

The latest convert to the Net is our favourite avuncular power-crazed tyrant, Saddam Hussein. To mark his 60th birthday, Iraq's bashful leader unveiled an official homepage including a facility for loyal fans to email him their *bon mots*. One slight hitch, though. Iraq has no telecoms backbone, so all messages will have to be picked up in Jordan, printed out and couriered 500 miles for the great man's perusal.

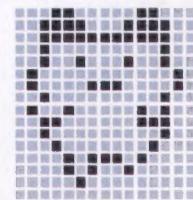
www.pen.net/~jihad/p2.htm

Look through my coffee

Now here's a dilemma. What do Netheads drink if they want the caffeine rush but prefer Colombian marching powder to Colombian freeze-dried granules? Well, Java water, of course, the hip new drink washing over the West Coast. River City Beverages came up with the idea of adding caffeine to pure natural spring water. Hmm. And yes, the idea did originate in California.

Checkmate for humanity

It's all over for us humans. World chess champion Gary Kasparov finally admitted defeat in the face of the challenge from IBM's Deep Blue – the computer that can examine 200 million chess moves per second – in their man-versus-machine showdown. "The computer was



beyond my understanding," he told the post-match press conference, "and I was scared." He bloody should be. Ever seen *Blake's 7*? The machines are taking over. Today the chessboard, tomorrow the world...

Computer chat-up lines

Any sad, sad lonely bedroom surfers out there could get some social interaction after all thanks to Converse, a new computer system developed by Sheffield University and the Intelligent Research Group. Converse is pre-programmed to chat about 60 topics ranging from food to politics, and it can even adopt personality traits. The system uses text messages, but synthesised voice technology is close, according to the research team, which believes the system could replace marriage guidance counsellors or Citizens Advice Bureaux. Or those with no mates.

Tamagotchi mania

AOL now offers fans of Tamagotchi an online foster-parents forum. The craze for Tamagotchi – plastic baby eggs with a personality – is sweeping Japan, with over five million sold. A whole sub-culture has risen up, including bereavement counselling and crèches. Addicts now have access to an online care centre that will help you nurture your pet as well as get in touch with other 'new parents'. *Internet Magazine* hopes that AOL will also set up an online support group for people WHO NEED TO GET A LIFE. FAST.

www.urban.or.jp/home/jun/tama/index.html

Soundbites of the Month

"We hate Jimmy Hill. He's a *&%!, he's a *\$*."
Comments posted to the *Tartan Army* Web site by high spirited Scottish footie fans

"Jimmy Hill is a very important figure in post-war football and he is very upset."
David Roodyn, Jimmy Hill's legal representative, on The Chin's reaction to Net insults

"It is clear that the Web is not some gimmick..."

The nerds who were there first and try to frighten the rest of us away with their childish jargon and ghastly talking shops are losing the battle for exclusivity. We will soon outnumber them on the Internet, and then we will civilise it."
Alexander Chancellor, The Guardian

"One person's surfing is another one's serfdom. The division of the world into information 'haves' and 'have-nots' will worsen as a result

of the information revolution."
Victor Keegan's crushingly superficial and stereotype-pandering article, "What a Web We Weave", The Guardian

"An interest in the Internet is irrefutable evidence of low intelligence, so I only use it occasionally."
Stephen Bayley, design guru and Coca-Cola fan, Media The Guardian

Top 9 sites

He's got a moustache. He wears a beret. He believes in mass religious persecution and he's got his own Web site. We salute our fave dictator!



1 Saddam Hussein, president of Iraq

www.rjgeib.com/thoughts/burke/hussein.html

Where we learn he has least one mistress, he went to Cairo University and he has an ego larger than the US military. All these fantastic facts and more.

2 Saddam Hussein the unrepentant

www.int-review.ch/ang/articles/n40/irq17a.html

Saddam and his family are having 39 palaces constructed or renovated for them. Cost: US\$1.2 billion. A dictator who reads *Elle Decoration* for kicks.

3 Saddam jokes

www.tios.cs.utwente.nl/~kenter/jokes/saddam.html

Courtesy of Jay Leno, here's an interesting fact. Did you know Saudi Arabia has an estimated 6,500 princes... but no frogs. Spooky.

4 A letter to Saddam

www.cns-nj.com/godsweb/iraqi1.html

The LORD HIMSELF now works directly through me. HE does sincerely want to thank you. HAAAllelujah.

5 Saddam Hussein: enemy profiles

<http://link.lanic.utexas.edu/menic/oil/game/simulation/profiles/sp1993/0014.html>

Oy, Saddam. Behind you...

6 Whatever's to be done about Saddam Hussein?

<http://link.lanic.utexas.edu/menic/utaustin/course/oilcourse/mail/iraq/0012.html>

Get rid of him to prevent him from taking the entire region with him as he commits suicide – Hazem Saghiyah in al-Hayat. Any other suggestions?

7 Iraqi quagmire

www.atr.org/townhall/columnists/otb/NH/lessner.html

It leaves Saddam with the initiative to poke and probe. Amateur gynaecology. Is there no end to this man's talents?

8 The making of Saddam the Tyrant

www.net-connect.net/~jspeyrer/tyrants.htm

Saddam's father deserted him. His mother didn't want him to be born and rejected him after birth. Ah, bless... he's so misunderstood.

9 The Quiz

www.everybodys.org/archive/419/quiz.html

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